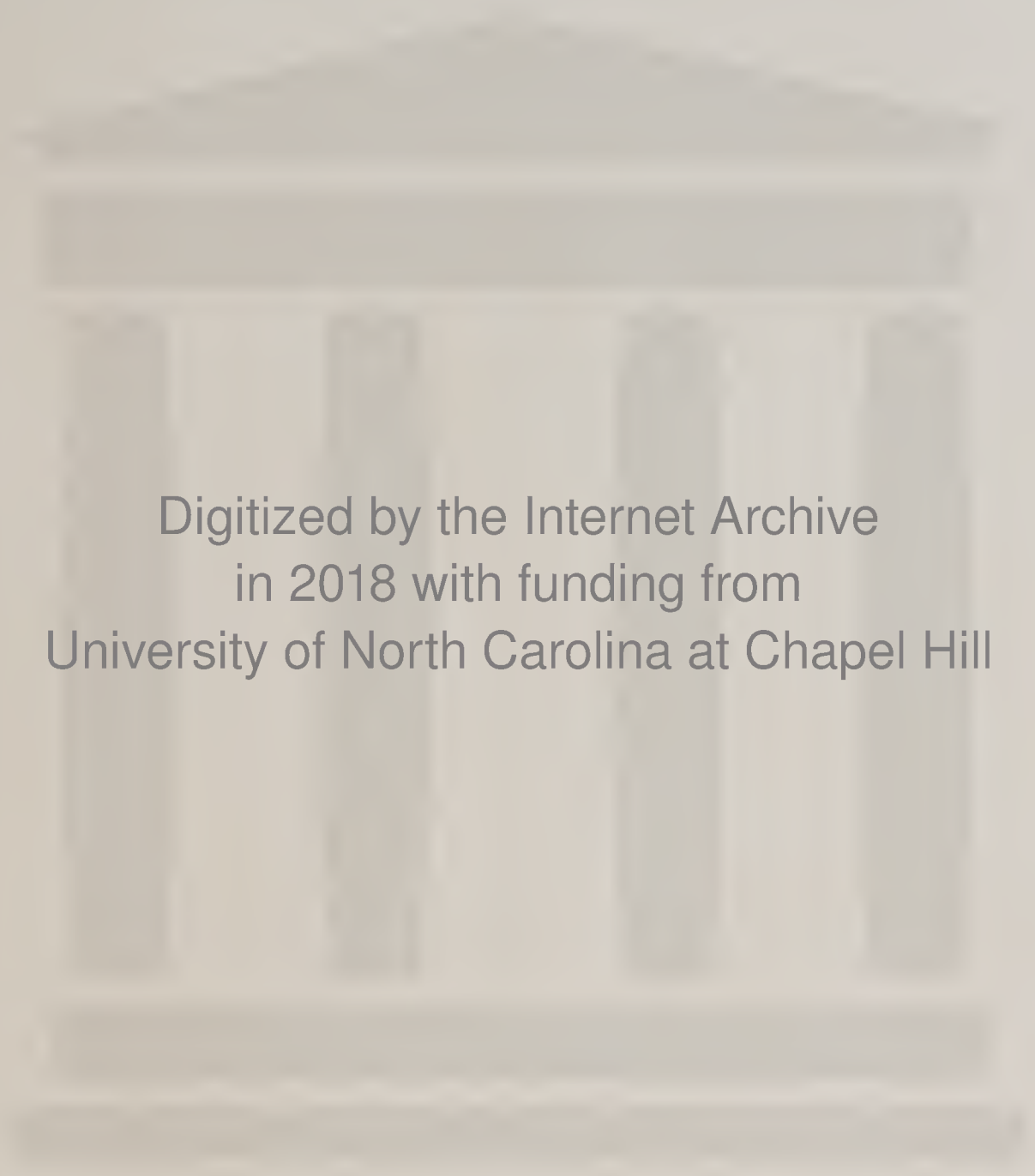




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For Dr. F. M. Potter

R E P O R T

ON THE

MEDICAL TOPOGRAPHY AND EPIDEMICS

OF

NORTH CAROLINA.

BY

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EXTRACTED FROM THE
TRANSACTIONS OF THE AMERICAN MEDICAL ASSOCIATION.

PHILADELPHIA:
COLLINS, PRINTER, 705 JAYNE STREET.
1860.

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J. H. Miller

REPORT ON THE MEDICAL TOPOGRAPHY AND EPIDEMICS OF NORTH CAROLINA.

MEDICAL TOPOGRAPHY.

THE State of North Carolina, embracing an area of more than fifty thousand square miles, extending from 34° to $36^{\circ} 30'$ of north latitude and from longitude $1\frac{1}{2}^{\circ}$ east to 7° west of Washington, and from the Atlantic Ocean on the east to the Alleghany Mountains on the west, would seem to present a sufficiently wide range of geological, meteorological, and climatic conditions to give origin to no inconsiderable variety of diseases.

If, however, any reliable results can be deduced from the confessedly meagre and imperfect reports which I have been able to procure from different parts of the State, there will be found very great uniformity in the diseases of all parts of its extended area.

On the eastern or Atlantic border of the State, there is an extensive region of low, swampy, alluvial formation, but little elevated above the level of the ocean, which, as the country recedes from the coast, merges into a wide, flat, sandy region of a somewhat higher level, covered with extensive forests of pine, and gradually increasing in elevation until the head of navigation of its principal rivers is reached, when the face of the country becomes rolling and hilly, and the pine forests abruptly disappear; being replaced by a growth of oaks of great variety, and of hickory, poplar, sycamore, black walnut, beech, maple, &c.

The entire eastern section of the State, from the seacoast to the first rapids in the principal rivers, at an average distance of about an hundred miles from the ocean, is without doubt a marine formation, or sedimentary deposits from water, and therefore wholly unlike those of the middle and western parts, which are the product of the slow decomposition of the primitive rocks; and occupy

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the place upon the original formation, from which they were derived.

The soil of the eastern section has evidently been transported from a distance. Its prevailing character is silicious, derived apparently from the granite which borders the tertiary formation on the west. From the same source is probably also derived the aluminous and feldspathic portions of the soil, which enter into the composition of the inexhaustibly rich swamp lands of the eastern counties.

The hilly middle region of the State has generally an argillaceous soil variously intermixed with silex, mica, and different mineral ingredients. It has had, and still retains, a high character for the salubrity of its climate and the fertility of its soil. We may regard this section of the State as extending to the base of the Blue Ridge Mountains by a gradually increasing elevation.

The mountainous portion of the State, as indicated by recent surveys, embraces the highest elevation of any portion of North America east of the Rocky Mountains.

The littoral margin of the State of North Carolina is unique and almost peculiar in one of its geological features. At a distance varying from two to five miles from the main land a narrow strip of sandbank runs parallel with the coast and nearly continuous with it, like a giant breakwater, thrown up apparently by the action of the waves of the sea; these sandbanks are for the most part bare of vegetation; some portions, however, are covered with a thick growth of live-oak, cedar, and yopon, which latter shrub is regarded by competent authority as identical with the much valued matté of Paraguay. The continuity of this strip of sandbanks, is occasionally broken by narrow inlets; and between the banks and the main land, there intervenes a shallow sound, which is for the most part occupied with a rank growth of marsh grass, which is alternately covered and left bare by the rising and falling tides.

It thus presents precisely those conditions of insalubrity which Armstrong, in his "Art of Health," so graphically groups in the couplet which follows:—

"Not for the wealth of all the Indies roll'd
Fix near the marshy margin of the main."

There is doubtless something of truth as well as poetry in the lines, although we are apt to suspect the writer to have been influenced in some degree by the beauty of the alliteration, when

Not so. Dr. J. L. Armstrong started the error.

penning them; however true they may be in their application to many localities, our coast can hardly be ranked among them; for it is favored with delightful breezes during the summer which sweep away such impurities as are supposed to be engendered by the action of the hot sun on marshy soils; at any rate, so far from being more subject to the visitation of intermittent and remittent fevers, than the adjacent counties, the seashore has acquired quite a reputation for salubrity, and is a common summer resort for many of the inhabitants of the interior.

In the most easterly portion of the State, the strip of sandbanks just noticed recedes considerably farther from the main land, leaving an intervening space of many miles in extent, which is occupied, mainly, by Pamlico and Albemarle Sounds, extensive sheets of water, into which most of the rivers which drain the middle and eastern portions of the State, among which may be mentioned the Roanoke, the Tar, the Neuse, disembogue by wide estuaries.

The country along the margin of the sounds and the estuaries of the rivers, may be generally characterized as swampy; elevated but a little above the level of the ocean, being of the most recent geological formation, and consisting largely of decomposed vegetable matter, which confers upon it great fertility, and at the same time stamps it with the character of insalubrity.

A very considerable portion of all the littoral counties of the State, especially along the margins of the rivers and creeks, is of the same swampy character, for the most part fertile, but unhealthy. Throughout the middle and western divisions of the State, valuable minerals are found in abundance; among them, ores of iron, copper, and gold, and in the middle region of the State, on the belt of sandstone, which crosses it, are found bituminous, semi-bituminous, and anthracite coals.

The mountainous portion of the State, embracing about one tenth of its superficial area, is remarkable for its salubrity and its altitude, and for a considerable extent, forms the dividing ridge, from which, on the one side, the rivers flow into the Atlantic Ocean, and on the other, into the Mississippi River and the Gulf of Mexico. From one point, indeed, the waters flow north, south, east, and west, into Virginia, South Carolina, Tennessee, and the Atlantic; a geographical feature which is believed to be peculiar to this State.

Another remarkable peculiarity of this mountain region of the State of North Carolina, is the existence of a belt or zone, which is characterized by an entire exemption from frost. Frost occurs

both above and below this remarkable zone, and the strange spectacle is sometimes presented of vegetation blighted by frost both at the base and apex of the mountain, while the intermediate region presents to the eye the blooming verdure of spring. Here, fruit falling from the trees, needs no protection during the winter; here, the vine flourishes in great perfection, and our sanguine agriculturists are anticipating, for this part of the State, great success as a wine making region.

DISEASES.

The great endemic of southern climates, Bilious Remittent Fever, claims the first place in the nosography of this State.

BILIOUS REMITTENT FEVER.

For many years, it may be said to have been the reigning epidemic of the entire eastern section of the State, of such uniform occurrence in the summer and fall, and so formidable in its character, that few who had the ability to remove to more salubrious localities, were accustomed to remain during the season of its prevalence, in the low country.

This form of fever, so unfailing in its periodical visitations, often beginning as early as June and remaining until the occurrence of frost, which generally takes place in the latter part of October, has of late years, lost much of its malignity in the low country, but seems to have acquired an increased power of diffusion, having gradually encroached upon the middle region of the State, and extended itself almost to the base of the Blue Ridge Mountains.

A few years ago the remittent and intermittent forms of fever were as prevalent in Salisbury, Concord, and Charlotte, in the middle region of the State, as in any of the counties on the seaboard.

I am informed by physicians resident in the mountains, that these forms of fever are never known to originate there, but are not unfrequently imported by travellers, and that the mountaineers look upon a journey to Charlotte or Salisbury in autumn, with much the same feeling of apprehension with which an inhabitant of either of these towns would regard a visit to Wilmington, or Washington, on the seaboard.

For some years past, remittent fever, as it has prevailed in the eastern or sea-board counties of the State, has been almost uniformly of a mild type; very rarely presenting the severe gastric and hepatic derangements which constituted such troublesome and dangerous complications in former years.

Thirty years ago, this form of fever was frequently attended with a duodenitis which extending along the hepatic ducts and their ramifications, caused such a suspension of the functions of the liver as to lead to the retention of the elements of the biliary secretion in the blood and gave to the skin that icteric hue which allied it closely, both in the popular and professional mind, with the yellow fever of the tropics.

As experience has taught us that quinine is entitled to the rank of the febrifuge *par excellence* in this form of fever, we have been able, of late years, to dispense with much of what formerly constituted the regular *armamentarium medicorum* in its treatment.

We have now but little use for sudorifics, effervescing draughts, cold affusion, or the lancet, and the disease is rarely suffered to run on long enough to give rise to organic complications.

In cases of much severity, or in which alarming indications present themselves, the abortive method of treatment by the rapid induction of a state of cinchonism has become a favorite plan of proceeding.

It has rarely been found necessary in this locality (Wilmington), however, in order to produce this effect, to resort to the very large doses of the drug, which have been recently recommended in our medical periodicals and practised in other parts of the State. In the vast majority of cases, which occur here, the system may be brought sufficiently under its influence, by doses of from two to five grains every hour or two, until the muffled ear gives token of its peculiar influence upon the nervous system and the reduction of the excited pulse exhibits its influence on the vascular system.

One class of cases in which it is very desirable if not indispensable to bring the system very speedily under the influence of quinine is that which occurs among children attended with convulsions (*Febris Remittens Convulsiva*). In this class of cases the first and sometimes the second paroxysm of fever may be unattended with the appearance of any alarming symptoms, but the third paroxysm is apt to be ushered in with a convulsion which seems to replace the cold stage of the same disease in adults, and which is always so alarming and dangerous an occurrence, as to make it

prudent to cut short the disease at once by bringing the system very rapidly under the potent influence of the febrifuge.

For the very valuable suggestion upon which this practice is founded we are indebted to Dr. Henry F. Campbell, of Georgia. Detecting the fact that the convulsion was but a chill in disguise, and therefore liable like the chill to a periodical recurrence, he has put us on our guard and enabled us to ward off an imminent danger. I feel assured that by acting in accordance with this precept I have been enabled in a very large number of instances, to divest this form of fever of its danger.

Although quinine has the power of arresting the progress of every variety of remittent fever, even after local inflammations and congestions have been superinduced, still its salutary operation is greatly obstructed by such occurrence. In cases which will admit of delay, these local derangements should be relieved by the use of such local and general remedies, as may be indicated by the special complication; but in formidable cases, we should not hesitate to give it concurrently with those remedies.

The ordinary cerebral and lumbar pains, which invariably accompany remittent fever, do not contraindicate its use. On the contrary they are speedily relieved by it, and in many cases without the use of those *adjuvantia* which are commonly prescribed for their relief. When, however, these symptoms are more than usually violent, or unusually persistent, no prudent practitioner would neglect the use of ancillary measures.

Where there are evident symptoms of gastritis, as indicated by extreme irritability of stomach, especially when accompanied with vomiting of a *glairy white-of-egg-like* fluid, local depletion, a blister to the epigastrium and ice ad libitum will be found useful preparatory or co-operative measures.

The symptomatology and pathology of this form of fever so plainly point to the liver as an organ which bears in a large degree the onus of the malady, as to make it important that we should not overlook or neglect the remedies which experience has furnished us with for the purpose of rectifying its disordered functions.

The essential anatomical condition of this form of fever would seem to be, according to the views of Drs. Swett, Stewardson, and Howard, confirmed by the industrious and careful microscopic examinations of Dr. Joseph Jones, of Georgia, to be that condition of the liver which they have designated by the term bronzed liver.

Dr. Jones, in his very elaborate and learned paper on Malarial

Fever, published in the twelfth vol. of the *Trans.* of the Amer. Med. Association, attributes this peculiar color of the liver "to changes in the coloring matter of the blood, as is indicated by the fact that the blood from the capillaries of the liver will not change from the dark reddish-brown and purplish color, to the arterial hue on exposure to the air. It is probable that the altered coloring matter from the destroyed disintegrated blood-corpuscles, or from the blood-corpuscles acted on by the malarial poison without actual disintegration, escapes and permeates the surrounding tissues, and imparts the peculiar color to the liver."

In the same valuable paper it is stated that the glycogenic function of this organ is also frequently impaired. Whether this derangement of function is to be regarded like the bronzed color, as characteristic of this form of fever, can only be determined by more extensive observations.

But whatever may be the precise deviation of this organ from the healthy state, experience has demonstrated the advantage of such remedies as are supposed to possess cholagogue properties, among which mercurial cathartics rank highest with the profession generally.

Though decidedly sceptical with regard to the possession of any such property by any form of mercury, I still regard it (but solely upon empirical grounds) as a very valuable medicine for rectifying disordered hepatic functions.

I have, I think, occasionally witnessed the sad consequences of neglecting the morbid condition of this viscus and relying too exclusively on the remedial powers of quinine.

The highly inflammatory type of remittent fever is rare in this locality (Wilmington), of late, and hence the use of the lancet is seldom required in its treatment. Instead of its being the general rule to bleed now, as it may be said to have been twenty years ago, bloodletting is the rare exception to the rule.

That bleeding was an indispensable remedy in the highly phlogistic diathesis, which prevailed twenty-five years ago, no man whose experience reaches over that number of years, will be likely to deny.

Whether the human constitution has been so influenced by the external conditions to which it has of late years been subjected, as to modify its morbid manifestations; or whether the nature of the disease itself through some occult modification of its exciting causes, has undergone some change, may not be very easy to determine.

But that a very decided change has come over the manifestation of the disease and the indications of treatment within the last quarter of a century, is a fact testified to us from all quarters.

While it is indisputably true, that great and notable advances have been made in the diagnosis of diseases within the period under review, and we might, therefore, not unreasonably doubt the accuracy of the diagnosis of our predecessors, who depended only on the rational symptoms, and by logical inference deny the value of their experience, as to the necessity or even utility of the remedy, this would only avail so far as regards the thoracic complications of the disease; for, as a general rule, although this disease presents more or less diversity of aspect in different years, it rarely changes its phasis to such an extent as to render its diagnosis a matter of difficulty.

We are not, therefore, warranted in condemning the practice or in ignoring the experience of the age which has just preceded us; nor in pluming ourselves on any demonstrated superiority in practice. Another cycle of twenty or thirty years may lead our successors to wonder at what they may have good reason to regard as our weak and inefficient *methodus medendi*.

That the type of disease varies, from year to year, or within a series of years, is a proposition which has received the very general assent of the profession since the days of Sydenham; and although we may regard his ascription of it to some occult atmospheric constitution, as but a hypothetical solution of the problem, it will not be wise to disregard the great amount of observation and experience which has since been accumulated upon this point, and to conclude that because bloodletting does not *now* seem to be a *sine qua non* in the treatment of inflammatory disorders, that it never has been entitled to be so regarded.

Extreme opinions on medical, as on many other subjects, rarely stand the test of time and experience, and though the aphoristic words of Hippocrates, "*experientia fallax judicium difficile*," embodies a desponding truth, experience must, I presume, still be regarded, as the great arbiter both of opinion and practice.

The congestive and adynamic types of remittent fever have been of very rare occurrence of late years, in the maritime counties of the State; but the interior and middle districts of the State have not enjoyed a similar exemption from these grave forms of fever. Dr. N. I. Pittman, of Edgecombe County, reports, "that during the year 1857, we have had, in Edgecombe County, bilious remittent

fever to prevail more generally than it had done for the preceding eight years. Our summer and autumn were unprecedentedly hot and dry, the spring months having been cool and wet. The type of fever which has prevailed with us since the spring of 1855, has been of a continued character, assuming often a *typhoid* or *adynamic* form; and occasionally we have had genuine idiopathic typhoid fever, answering admirably to the descriptions of Louis, Wood, Stokes, and others.

"In the treatment of the bilious remittent fever which visited our section of the country, there was no special or novel practice instituted. We relied principally upon mercurial cathartics, quinine, cinchona, diaphoretics, blisters to the epigastrium, nape of the neck, and spine, as symptoms seemed to demand."

Dr. H. Kelley reports the prevalence of remittent and intermittent fevers, in the County of Iredell, in the western part of the State. These diseases prevailed to a considerable extent, in the neighborhood of large watercourses. Dr. Otis Frederick Manson, of Granville County, gives us, in a paper read before the N. C. Med. Society in 1856, a description of the *adynamic* and *congestive* varieties of remittent fever as they prevailed in that section of the State, from which I extract as follows:—

Adynamic Remittent.—Remittent fever of a low grade, and persistent character, strongly simulating continued fever, may present itself as a sequel to neglected or mismanaged cases of the ordinary form of the disease, or may occur *primarily*.

Its approach is commonly, however, less abrupt than the usual form, the invasion being often unattended by a decided chill. In other respects the prodromiæ do not differ essentially from an ordinary attack. The pulse is of ordinary frequency, not usually exceeding 100 per minute in adults. The exacerbations and remissions are indistinctly marked, the pulse in many cases varying only eight or ten beats in twenty-four hours. The heat of skin is moderate, and very often attended with some moisture, during the greater period of the attack. When the disease is fully formed, the tongue becomes more or less pointed and red at its tip, and on its edges, with a brown fur on its dorsum. The patient does not usually experience much acute pain. A dull headache, but not continuous, together with some abdominal uneasiness, is generally present. Diarrhoea sometimes occurs, and although it may be absent, a tendency towards it is manifested by a morbid susceptibility to the action of cathartics; the mildest aperients producing severe

tormina, and frequent copious serous discharges. As the disease advances, the tongue becomes dry, brown, and even black, or parting with its coat, it presents a clean, red, shining surface. The abdomen becomes tympanitic, tense, and tender to the lightest touch, or as, in some cases, although enlarged, yet it is soft, its walls yielding to the weight of the viscera; the skin being wrinkled, dry, and desquamating, and the separate and relaxed muscular fibres imparting a sensation to the hand as if the cavity was filled with lumbrici. The mind is usually clear, in the first stages; as the disease advances, however, the intellect yields. Continuous muttering delirium, colliquative diarrhœa, and sometimes intestinal hemorrhage supervene (the blood in the latter instance being fluid, uncoagulable and horribly offensive), under which the patient soon succumbs.

GRAVE REMITTENT FEVER.—(Synonyms: *Congestive Fever*; *Per-nicious Fever*; *Algid Fever*.) Dr. Manson continues: We now proceed to describe a grade of remittent fever that may be justly ranked with the most fearful and fatal scourges which afflict humanity. In the phases of this affection, predescribed, nature seems to have resisted the action of the morbid cause with energy and promptness, but in this the vital power seems overwhelmed and powerless and, unassisted, too often surrenders.

Grave remittent may occur as a primary form of disease, or, as more generally the case in this region, it commences with the symptoms of mild remittent or intermittent fever, when either from its natural cause, or more frequently from exposure, or improper treatment, such as ill-timed depletion or purgation, it suddenly presents the graver and alarming symptoms which characterize it; the most conspicuous of which are a prolonged cold stage and failure or disappearance of the pulse. The symptoms, however, in other respects, often widely vary, and in my opinion may be classed under three heads, viz: Those referable to, and arising from, a perverted action of different portions of the cerebro-spinal axis, as follows: 1st. Symptoms arising from congestion of the cerebrum; 2d. Those arising from congestion of the cerebellum, pons varolii and medulla oblongata; and 3d. Those arising from congestion of the spinal cord. We deem it proper to describe the symptoms presented in all these modifications.

The phenomena which forcibly arrest the attention of the observer are those presented by the state of the skin, and the pulse. The

patient is cold, the features are sharp and shrunken, and the surface is shrivelled. In some cases it is merely pale, but in the worst cases, the skin is of a dusky purplish hue. It may be dry, but usually it is damp, or even wet, with exhalation, which is sometimes glutinous in its character; it may be deficient in sensibility, to such an extent that the common external irritants, such as rubefacients, sinapisms and blisters, produce no impression. This condition of skin may exist over the whole body, but usually within my observation, it does not pervade the trunk, being confined to the upper and lower extremities, the nose, cheeks and ears, the rest of the head and body being of febrile heat. The pulse is very frequent and small, and in some rare instances disappears entirely from the wrist. The respiration is more or less disturbed. The patient complains of a sense of oppression about his chest; he sighs often, suffers from sensations of internal heat, demands cold drink, desires to be fanned, and strenuously objects to any covering being placed on his clay-cold limbs. The cardiac sounds and impulse are normal, and in some cases more distinct than in health *when* the *coldness* of the surface is confined to the extreme parts, but when it pervades the whole periphery the sounds and impulse are indistinct and feeble. The strength of the patient is often remarkable, so that he is able to assist himself, and even to walk about his room for some time.

Diarrhœa is sometimes present, but is not a constant symptom. The duration of the cold stage varies very much, but it rarely continues beyond eight or ten hours; it however may endure much longer.

Exacerbation.—The reaction may be perfect or partial. The heat gradually returns to the surface, and extends to the extremities; the pulse becomes less frequent and more expanded; the breathing becomes disembarrassed; the symptoms common to the milder grade being present in ratio with the development of the febrile action. This stage endures from ten to twenty-four hours, and is succeeded by a stage of congestion, which in turn yields to a reaction more or less distinct, or is fatal, the disease having a tendency to terminate on the third, fifth, and seventh days mortally, or subsiding into the mild form, or into intermittent fever.

Congestion of the Cerebrum. The cold stage.—The patient may be suddenly seized with the symptoms of inordinate sanguineous determination to the superior portion of the encephalon, but usually there are some premonitions. He complains of pain in the frontal

region of an acute throbbing character; the intellect is confused and wandering, and he is disposed to sleep, the drowsiness gradually increasing to coma. He seems to be in a profound sleep, but sometimes can be aroused by shaking forcibly, and calling aloud, when he may reply in monosyllables and intelligibly, but instantly sinks into stupor again. He breathes softly, regularly, and but little more frequently than in health. His extremities are cold and of a bluish tint, the coldness extending to the pelvis and axillæ, the trunk and head being of febrile warmth. In some instances the whole surface is cold, but this is rare. The skin is usually dry or but slightly moist, this variety not being usually attended with colliquative sweat. The pulse is frequent and small.

The exacerbation.—The pulse still indicates evidences of an impeded circulation and rarely regains its normal volume or force, the breathing becomes more accelerated, the patient grows restless, and gradually regains his faculties. He now complains of cephalic pain, of nausea, and occasionally vomits, and the whole surface becomes warm and even hot. As the exacerbation declines, the patient becomes more comfortable, and himself and friends look forward to a speedy convalescence; but this is a deceitful calm. The cold stage recurs with aggravation of the cerebral symptoms and increased prostration of the general powers. In some cases, however, without assistance, the second cold stage assumes a mitigated character, gradually subsiding into a mild remittent, or intermittent form. When the disease, however, continues unabated, the third paroxysm is prone to prove fatal, but the termination may be postponed to a more advanced period.

Congestion of the Cerebellum, &c. The cold stage.—Unlike the variety just described, the intellectual functions in this are undisturbed. The patient complains of fixed pain in the occipital region, is very restless, constantly shifts his position, complains of great difficulty of breathing, and often declares “he will die for want of air.” He experiences a distressing sense of internal heat and oppression. The respiration is irregular and laborious, the expirations being forcible and prolonged. (By some, these symptoms have been attributed to pulmonary engorgement, but it is now known, that the lungs after death very rarely present the slightest indication of such a condition having existed; the dyspnoea is therefore evidently owing to impeded innervation, and this proceeding from a congested condition of the vessels of the cerebellum.) The skin is cold, of a purple and mottled appearance, bedewed with

moisture. This state of the surface is usually confined to the extremities, the remaining surfaces being above the natural temperature. The tongue is dusky and expanded, and in extreme cases, it is cold, as well as the breath. The bowels are generally sluggish, but the urine is copious and limpid. The patient often arises from his bed, but his *gait is tottering and unsteady*, and he sometimes falls to the floor suddenly, as if stricken lifeless, but instantly arises again; thereby proving that it is not simply from *debility* that he is unable to retain the erect position, but from *a loss of control over his muscular movements*. The pulse is very frequent and small; nausea is not usually present, but the patient makes frequent efforts to vomit, thinking thereby to remove the thoracic oppression. Insensibility of the stomach to the action of medicine, is a prominent condition in this stage, which rarely endures for more than ten hours.

The exacerbation.—The reaction gradually ensues, and in proportion to its development, the symptoms belonging to the cold stage disappear. The respiration becomes more regular and free, the pulse slower and expanded, the skin becomes warm and even hot, and the pain in the occipital region mitigated; nausea and vomiting are apt to ensue, and the stomach responds to the action of medicine readily. Without interference the cold stage again occurs, the second paroxysm often proving fatal.

Spinal Congestion. The cold stage.—This is attended with symptoms of a milder character, and is of shorter duration than the preceding varieties of the grave form. The spinal pain is confined to the dorsal and lumbar regions, and is not of an acute character, save when pressure is made on the affected region. Unlike the former varieties, in this the intellect is unaffected and the respiration free.

The diminished temperature is usually confined to the extremities, and rarely extends beyond the knee and elbow, nor is there usually present any superabundance of moisture, the cold surface being dry or merely damp, the remaining surface (always excepting the facial extremes) being above the natural heat. The patient (in this as in the former varieties) is ignorant of the coldness of the extremities, and complains of heat, is restless and suffers *violently from spasmodic pain in his bowels*, which are usually costive. To such an extent are the abdominal pains present, that the disease has been mistaken for an attack of colic. The pulse is not usually much accelerated, but is irregular during the paroxysm of

abdominal pain. This stage rarely exceeds one or two hours in duration.

The exacerbation.—Although the reaction is usually decided, the fever is rarely intense. The skin becomes warm and expanded, and often moist. The pulse, unlike as occurs in the former varieties, now usually becomes *morbidly slow* and is *characteristic* of this phase of remittent. This condition of the pulse, unless observed and counted, is apt to throw the inexperienced off their guard. I have known physicians of no mean skill, declare that the patient was but slightly ill, who nevertheless expired in the next paroxysm. More or less tenderness will be found on pressure of the abdomen, chiefly in the umbilical region, but the spasmodic pains are always mitigated, and sometimes entirely disappear in this stage, which is more prolonged than in the other varieties. A complete remission, late in the night, or during the morning hours, often ensues, in which the patient sleeps quietly, and presents so few marked indications of disease, as to attract but little attention. The cold stage however reappears, attended with more aggravated symptoms. The abdomen becomes enlarged and exquisitely tender, and the agonizing abdominal pains return.

As the disease advances, the abdomen becomes tympanitic; serous, or as is more often the case, hemorrhagic discharges ensue, the blood being black, liquid, and offensive; the coldness extends over the whole surface, a clammy sweat breaks out, the features become cadaveric, and the patient sinks into coma and expires. The fatal termination is, however, usually postponed beyond the seventh day.

Diagnosis.—A well marked case of either disease would rarely be mistaken by an observer of ordinary perception; but under the head of adynamic remittent, we have endeavored to depict a form which bears enough resemblance to typhoid fever to be often confounded with it. Like typhoid fever, adynamic remittent may appear at any season of the year. It is rarely attended with much acute suffering, and is protracted in its duration. The resemblance is rendered more striking by the evidences of abdominal lesion in both, the tongue being inclined in either to be red and dry, and diarrhoea and meteorism being symptoms common to both. Here, however, we think the analogy ends. In remittent there is an absence of that peculiar, stupid, vacant expression, deafness, and the irregular exacerbations of continued fever.

Epistaxis and sudamina, so continually present in typhoid, are rare in remittent fever. The chill of remittent differs from that

of any other disease whatever. In typhoid fever, there is a peculiar condition of the patient, which, as we have never seen described, we think it proper to notice. The patient complains of a sensation of intense cold, and in some instances will shiver as with an ague. These nervous shudderings, or instances of extreme nervous irritation as we deem them, may occur frequently during the day or night with great irregularity, disappearing for several days together, and then returning again. So far as our observation extends, these rigors are unattended with the slightest diminution of the temperature of any part, the whole surface being rather above the normal standard, even to the most extreme parts; indeed we have noticed these paroxysms to occur in many instances, when the patients were in a warm perspiration. It is worthy of notice that these chills (as writers term them) are not followed by any perceptible increase of febrile excitement, which is an invariable sequent of the chill of remittent. The pulse, although frequent in both diseases yet is attended with fluctuations, so different from each other, in the respective fevers, as to present a most invaluable aid in diagnosis. Cullen, Parr, Good, and others, have declared that in continued fever, there are two diurnal exacerbations, whilst in remittent there is only one. We have often verified the truth of their distinction, and we feel assured that in doubtful cases, the peculiar character of the fever may be detected by this test. The pulse should be counted at short and regular intervals throughout the day and night. If the case is continued fever it will rise and decline twice, the first exacerbation occurring in the morning, and the second in the afternoon, or night. In remittent, only one exacerbation will thus be discovered.

The perspiration and urine have a peculiar odor in typhoid, which I have never observed in remittent fever. The intestinal evacuations are infinite in their varieties, in both diseases, but there is a discharge of a peculiar character in typhoid, which I have never seen in remittent. It is of a shining, reddish-brown appearance, about the consistence of molasses, and seems glutinous in its nature, adhering to the side of the vessel, and is very offensive. The viscid, green-black, inodorous, bilious evacuations, which almost certainly indicate a favorable termination in remittent, I have never seen in typhoid fever. In the latter disease, healthful and perfect digestion often returns, and natural and consistent feces are evacuated, sometimes before the disappearance of febrile excitement. These we have never witnessed in remittent, until

convalescence was established. Intestinal hemorrhage is often present during the course of typhoid fever, but as a rule, attends only the termination of remittent. In the former, it is often salutary, the blood being of a bright-red color, coagulable and healthy in appearance. In the latter, it is fluid, black, and offensive, and is usually indicative of a fatal termination. I have not thought proper to recapitulate all the diagnostic signs known, which would be proper in a treatise, but supererogatory in a contribution. It is believed that the foregoing will almost invariably enable the practitioner to detect the proper character of the case.

Treatment of Mild Remittent. In the exacerbation.—If the pulse is hard or full, and resisting, especially if attended with intense cerebral or spinal pain, a moderate bleeding from the arm will produce great relief, but this will be very rarely necessary. Local bleeding will be generally found sufficient, and is an invaluable adjunct. Leeches to the temple, or cups to the occipital or spinal regions, may be freely applied, as the determination may indicate. If nausea or vomiting, or other symptoms of gastric irritation be present, leeches or cups to the epigastrium will be followed by great relief; and if these should be succeeded by a simple enema, under their conjoined action, the bowels will gently respond, and add greatly to the comfort of the patient.

Cold drinks, ice, the effervescing draught and lemonade, may be freely allowed. At bedtime—say at nine or ten o'clock—it is almost our invariable rule to administer a cathartic dose of calomel and rhubarb, of ten or twelve grains each. At some period, before or after midnight, the fever will generally be found more or less to decline. We prefer this period for the commencement of the abortive means, because our experience convinces us that quinine, the principal remedy, is then better borne, and produces its salutary effects in a more decided and complete manner, than at any other time.

We now, therefore, usually administer from ten to twenty grains of quinine at a single dose, in pills or diffused in a wineglassful of water. We regulate the dose by the degree of fever present. If it is intense, we administer the larger quantity; if very moderate, the lesser will answer. Under the combined action of the mercurial and quinine, free evacuation of the bowels will usually occur, but rarely excessive. Three or four hours are now suffered to elapse, during which the topical bleeding is repeated, if the local symptoms do not yield. The condition of the patient will now be

found generally much improved. The cerebro-spinal pain is either removed or mitigated, the pulse less frequent, and more soft, the skin relaxed and moist, and the gastric irritation subdued. We, therefore, repeat the quinine, in diminished doses of five or six grains every three or four hours, until the period of chill has passed, generally exhibiting from twenty-five to forty grains before that time. In cases attended with much gastric irritation, or diarrhoea, the addition of a full dose of opium—say one and a half to two grains, to ten or twelve grains of the submuriate, at bedtime, instead of the rhubarb—forms an excellent combination, which will enable the stomach to retain the quinine afterwards administered, with more certainty. Under this plan, remittent fever, as it appears usually in this section, is certainly and safely cured. We have, in this manner, arrested the disease in many hundred cases, in one night. Owing, however, to the peculiar liability of the affection to relapse, or terminate in protracted intermittent, we usually continue the treatment. We think it advisable to prescribe a mercurial alterative of calomel or mass hydrarg. for two or three successive nights, followed by eight or ten grains of quinine, or twenty-five drops of oil of turpentine, in divided doses, on the succeeding mornings. In cases attended with coma, delirium, or convulsions, during the exacerbation, topical bleeding will be freely required, and the application of cold. We have, however, been more gratified with the effects of the cold *douche*, in these complications, than with any other remedy. A full dose of calomel should be given, followed by stimulating enemata.

In the form described under the title of adynamic remittent, occurring as a primary form, this mode of treatment will usually suffice; but in protracted cases, a different practice will be found necessary, as quinine is not borne well, and the antiphlogistic remedies detailed are contra-indicated. Minute doses of calomel combined with opium, will usually be found of great service along with the employment of the oil of turpentine, which may almost be regarded as a specific in this variety. It is more suitable in this condition than quinine, as it is better tolerated; and while it possesses febrifuge properties very similar to the alkaloid, it also exerts a happy influence over the gastric and intestinal irritation so commonly present. It may be given in doses of ten to twenty drops in emulsion, repeated every three or four hours until the symptoms yield. It should be persisted in until the patient is fairly under its influence, unless the effects it occasionally

produces, viz: hæmaturia, strangury, or its peculiar intoxication supervene, when of course it should be discontinued. It would require too much space to speak of this remedy in this place as it deserves.

Treatment of Grave Remittent. The cold stage.—In this grade, external means are all-important. Warm applications are to be assiduously made to the parts reduced in temperature, together with stimulating frictions. These should be freely applied to the whole length of the spinal column and to the extremities. A large blister should be placed over the epigastrium, and if the head is affected, another to the nape of the neck.

Medicine.—To produce reaction along with these applications I prefer enemata of quinine. The plan preferred is to dissolve ten grains in a wineglassful of weak infusion of capsicum, with the addition of a few drops of elixir vitriol. This is thrown up the rectum every half hour until reaction ensues. If diarrhœa has been or is present, I prefer enemata of quinine and laudanum. By these means alone, cases apparently hopeless have been rescued. In a case of very protracted cold stage, a combination of one grain of calomel, one of quinine, and one-fourth of a grain of opium, together with frequent doses of camphor water, induced a speedy reaction. The oil of turpentine, in spinal congestion, is also an excellent remedy. Ten or fifteen drops, alone or combined with laudanum, may be given every hour or two, or more frequently.

The exacerbation.—The reaction is sometimes intense. When this occurs, I have ventured on the abstraction of blood from the arm in moderate quantity with decided benefit; but this is seldom necessary. The case only requires to be treated as the milder grade, save perhaps with a more liberal use of quinine. A moderate dose of calomel (ten or fifteen grains), alone or combined with one or two grains of opium, if there be much gastric irritation or diarrhœa, is followed in two or three hours by a full dose of quinine (twenty grains), and repeated in doses of five or ten grains every three or four hours, until thirty-five or forty grains are taken. The medicine should be so regulated, that the last dose may be taken two or three hours before the expected paroxysm. I have never seen a chill or cold stage recur after forty grains of Farr's quinine has been retained. Although the patient may generally be considered out of danger when the paroxysms have been arrested, yet I esteem it good practice to prevent a relapse, by placing the

patient on a gentle alterative course, and to repeat the quinine in diminished quantity for several days thereafter.

The foregoing graphic and discriminating description of the several forms of remittent fever as they appear in Granville and the adjacent counties, may perhaps be fairly regarded as applicable to the entire middle district of the State. Dr. Manson's report is silent upon the point of the comparative frequency of the graver types of the disease. If they constitute any considerable portion of the cases which occur, if they are not very rare exceptions to the great mass of cases, it would be fair to infer that the cause or causes which give rise to this form of fever, exist in greater potency in the elevated region of the interior of the State, than in the low paludal districts of the seaboard. It is true, that we occasionally meet in the tide-water counties, but little elevated above the level of the ocean, with cases corresponding exactly with his admirable delineation of the features of the graver forms of the malady; but these cases are exceedingly few compared with the very large number of the milder forms.

The congestive type of the disease, though occurring more frequently in some years than in others, can hardly be said to have constituted the *prevailing* type for many years past, if ever.

TYPHOID FEVER.

This disease first began to prevail in the interior of the State, and, as well as I have been able to discover, in the counties bordering on the State of Virginia, and was for a long time regarded by the dwellers in the low country as an up-country disease. For a series of years it seemed to be limited in its range, but has gradually spread in all directions, until it has come to occupy the entire area of the State, from the mountains to the seaboard; the eastern or seaboard counties, being the last to be brought within the sphere of its influence. It would thus appear to be but little influenced by the climatic or local conditions which obtain within the boundaries of the State. It has made a local habitation on the very summit of the Blue Ridge, and a dwelling-place in the swamps of the seacoast. Neither high nor low temperature exert much influence over it, for, though the worst forms of it occur in mid-winter, it also prevails during the greatest heat of the summer months.

Without entering into the vexed question of its etiology or occupying space with an attempt at the portraiture of the disease,

which has been so often and so ably depicted in its varying aspects and minutest features, I proceed to report such practical matter as I have been able to procure upon the subject.

Dr. M. Whitehead, of Salisbury, reports, that during the last twelve months, we have been remarkably exempt from remittent and intermittent fevers, but have had an epidemic of typhoid fever.

Within the last few years, the character of our fevers has undergone a marked change. The periodic fevers, which once maintained such an overwhelming preponderance in our cases, and were the endemic fevers of the country, have given place, in a very great degree, to this form of continued fever.

I have no doubt that many cases of neglected and adynamic remittent, have been classed and treated as typhoid fever; yet it must still be apparent to every observer, that the circle of our periodical fevers is diminishing, while that of typhoid and continued fever is enlarging. This may be due to an improved system of agriculture, to the draining and cultivation of the low creek and swamp lands. To whatever cause it may be due, the fact at any rate is obvious, that as our periodic fevers have diminished in number and importance, the continued forms of fever have increased, and in a great measure replaced them.

The first cases of this epidemic, occurred in the family of a gentleman residing eight miles west of Salisbury, in the month of February, 1858, and continued spreading over the adjacent country until the month of December. During that period nearly two hundred cases have been treated, in this county and in that portion of Davidson immediately adjoining.

The premonitory symptoms were well marked. General *malaise*, loss of appetite, disagreeable taste, white and slightly coated tongue, disturbed digestion, irregularity of the bowels, sense of muscular soreness and feebleness, variable pulse, dulness of intellect, headache, and vertigo, invariably preceded or accompanied its commencement. In a few days, the patient would complain of great chilliness, or have a decided rigor, and take to his bed, not to leave it again during his illness. After several hours, reaction would come on, the pulse would be quick and feeble and continue so throughout the attack, ranging from ninety to one hundred and thirty beats in the minute. I saw some cases, in which the pulse was but little above the normal standard, *for weeks* never exceeding eighty-eight at any period of the twenty-four hours. There would be two slight remissions, and two exacerbations in the

twenty-four hours. This I think is always the case in continued fever.

Tenderness and gurgling in the right iliac region could always be found early in the attack. Day after day presented the same *role* of symptoms, until about the eighth or ninth day, when the patient would complain of slight soreness of throat, and an eruption on the chest and abdomen would generally make its appearance, sparsely scattered over the surface. The time at which the enteric complications and cutaneous eruptions made their appearance was liable to very great variations, and in some of the cases, although the other symptoms were well marked, the eruption could not be found, although carefully sought for. About the same time, the tongue would be coated in the centre with the same creamy coat as at first, slightly thickened, but the edges and tip would be fiery red, and the organ itself contracted, sharp, and pointed. The abdomen would now become tympanitic and diarrhoea ensue, or if this latter symptom were absent, the bowels evinced unusual susceptibility to the influence of laxative medicines. I remember producing hypercatharsis in one case, with six grains of hydrarg. c. creta, administered in two-grain doses, at intervals of three hours.

As the disease progressed, in a large majority of the cases the tongue would clean off suddenly and become red, slick, dry and shining, the abdomen become more tympanitic, and its tenderness increased, and the gurgling more distinct. Delirium would now set in, especially at night. The patient muttered when asleep, had a besotted appearance, and exhibited indifference to surrounding objects; subsultus also occurred.

Some of the cases had purpura, bleeding from the gums, nostrils, &c. One case literally sweat blood. In nearly all of the cases there was more or less abdominal hemorrhage. One case lost, in a few hours, more than two gallons of pure blood from the bowels. It flowed from the rectum, as I have felt and seen it flow from the vagina, in uterine hemorrhage. He bled to death in a short time.

The time occupied in the evolution of the different phases of the disease and its duration, varied in different subjects, some of the cases terminating in two weeks; the majority lasting six, eight, ten, or twelve weeks.

This epidemic I could not but regard as contagious. Commencing on the plantation mentioned, embracing a large family of whites and blacks, it spread in every direction.

No visitors to the house, who remained all night and assisted in

nursing the sick, escaped. The attending physician, Dr. Luckey, ventured to remain one night, and in eight or ten days the premonitory symptoms made their appearance; he took to his bed after a decided chill, and was confined to his room eight weeks, with well-marked typhoid fever. The family with which he boarded, eight miles from the first patients, all took the disease from the doctor. During the harvest, those neighbors who sent their servants to assist the gentleman first alluded to in saving his grain crops, soon found that they had unwittingly introduced the pestilence into their own families.

In a few months, it had spread over an area of four or five square miles, crept along the creeks, and crossed the river into Davidson County. I have myself been long convinced of its contagious character. This epidemic was typhoid fever, and it was unmistakably contagious. Rarely indeed do our physicians see an isolated case of typhoid fever in a family.

Treatment.—The treatment at first adopted was in the first stage, minute doses of mercury, opium, and ipecac, with saline diaphoretics; quinine during the remissions, and Dover's powder at night to procure sleep. In the second and last stages stimulants, spts. of turpentine, blisters, dry cups, acet. plumbi, and opium, to restrain the diarrhoea and hemorrhages, with suitable nourishment, &c. Of the first eight cases so treated, four died.

In consultation with the attending physicians, we determined to put the rest of the cases on the use of ten grains of chlorate of potassa, every four hours; small doses of laudanum to restrain the bowels, nourishing, but easily digested broth, milk toddy, and whenever hemorrhage or any signs of purpura appeared, as large doses of muriated tinct. of iron and ol. terebinth. as the stomach would tolerate.

During the prevalence of the epidemic, chlorate of potassa was the main remedy in every case. Other treatment was used only as auxiliary to this medicine. The drink was a cold infusion of slippery-elm with ice in the first stage; towards the decline of the disease, a warm decoction of Virginia snakeroot was substituted for it.

The exact ratio of mortality I am unable to give, as I did not keep notes of the cases; but I am sure it did not exceed one in forty after we adopted this treatment.

I have now passed through the fourth epidemic of typhoid fever since my residence in North Carolina. I have attended alone, and in consultation with other physicians, a very large number of cases;

and of one thing I am perfectly convinced, and that is, that no *coup d'état* of professional skill or dexterity can ever suddenly arrest the progress of this disease. And yet I doubt the propriety of considering typhoid fever a "self limiting" disease. Indeed, I regard it as a dangerous doctrine. Too often, indeed, the physician is compelled to rely upon a very limited combination of resources, yet his art is of avail, in treating the complications that are so often superinduced.

In the "abortive plan I have no confidence, yet it does not follow because the disease cannot be *thugged* by heroic doses of quinine, that treatment can in nowise directly contribute to the arrest or favorable modification of the malady."

I interpret *rational medicine*, not to mean a mere folding of the arms—an idle watching of the disease, but the proper adaptation of the proper remedy at the proper time. To control symptoms is to control results and duration.

While on the one hand bad treatment may accelerate the progress and fatal termination of typhoid fever, on the other hand, judicious treatment may often shorten its duration, and even cure the patient.

Dr. H. Kelley, of Gold Hill, Rowan County, reports that during the fall and winter (1858) "we had a good deal of typhoid fever. There were two symptoms worthy of note, as occurring in this epidemic, viz: violent pain from the occiput to the cervical vertebræ, continuing for several weeks in some cases, and cerebral symptoms of a grave character, lasting from two or three days to six weeks, producing a complete blank in the memory of the patient for the time of their continuance."

"The only deviation from the ordinary treatment of the disease, consisted in the earlier administration of the ol. terebinth. than has been usual with us, and in larger doses than we had been accustomed to give it. I gave it in a number of cases early in the attack, and continued it throughout the course of the disease, and in not a single case so treated did hemorrhage occur.

"The cerebral, as well as all the other symptoms, were much mitigated by the use of this remedy. I do not think we should wait for the supervention of that condition of the tongue described by writers on the disease, as indicating its use before resorting to it; but should commence its administration at an early stage of the malady.

"In the majority of cases alarming hemorrhages occurred, which called for large doses of astringents and opiates frequently admin-

istered. After the hemorrhage from the bowels was arrested, obstinate constipation was apt to supervene, and required the repeated administration of castor oil to keep them in a soluble condition. Convalescence took place slowly. Notwithstanding the severity of this epidemic, there were comparatively few deaths."

Dr. R. D. Dickson, of Richmond County, bordering on the State of South Carolina, reports "typhoid fever as now (1858) and for several years past the prevailing form of fever in that part of the State, replacing to a great extent the remittent form of fever, which was previously the great endemic of the county.

"My invariable rule, in the treatment of this form of fever, is to avoid all active perturbing measures, especially the administration of strong purgative medicines. Where such have not been previously given, I find the disease for the most part a manageable one.

"After moving the bowels with a mild aperient, I rely, as a general remedy, upon the steady and persevering use of the sulph. of quinine in moderate doses until a mild diaphoresis is induced by it. The occurrence of this symptom (diaphoresis) I regard as a very favorable indication.

"Another remedy, of great and indispensable importance in this disease, is opium in some form. It is with me a leading indication to procure quiet sleep for the patient every night. For this purpose, I generally prefer the administration of pulv. opii et ipecac. comp. The regular exhibition of suitable nourishment with good nursing, may be said to constitute the remainder of the treatment adopted."

Dr. Bedford Brown, of Caswell County, reports, "that a very general epidemic of fever prevailed in his section of the State in the year 1857. It commenced about the first of July, and ended late in the ensuing November. The season was characterized by an unusual amount of moisture, and a temperature below the average of summer weather generally."

This epidemic comprised *three* different forms of fever, to wit, *genuine continued or typhoid fever; bilious remittent; and a mixed form, partaking of the character of both to some extent.*

The localities in which typhoid was most prevalent, were the high, poor ridges, while the bottom lands, and their vicinities, gave rise to remittents. The mixed form was not restricted to either locality. In the selection of locality, there was manifestly an existing antagonism between typhoid and remittent fever.

Neither the origin of typhoid fever, nor its extension here could

be accounted for on the principle of contagion. Frequently a number of cases would appear simultaneously in the same family, without any previous communication with cases of a similar character. We could not do otherwise than attribute it to miasmatic causes, modified either by local or constitutional influences.

"The disease was unusually protracted in its duration and of a low character. The progress of the epidemic was in a westerly direction, and by far the largest number of cases occurred among our negro population. It not unfrequently happened, that the entire black portion of a family would be attacked, while the white members would remain exempt from the disease, contrary to our preconceived opinions. The constitution of the negro also resisted the disease better than that of the whites, the mortality being greater among whites than blacks in proportion to the number attacked.

"The cases which came under my observation were seldom or never on the extremes of age, and by far the largest portion were males.

"During the progress of the disease, there occurred but few local complications. Parotitis occurred in several instances without materially influencing the progress of the case. Hemorrhage to a fatal extent occurred only occasionally. Sloughing of exposed parts occurred very frequently, and what is remarkable, took place about the period when recovery began.

"In regard to *treatment*, my chief reliance was placed on the free administration of diffusible stimulants, such as the different forms of alcoholic liquors, carb. ammoniæ, &c., and the plentiful supply of nourishment, judiciously selected with a view to its digestibility and the amount of concentrated nutriment it contained, and the exhibition of such remedies, as were calculated to prevent the excessive drain of material from the system, through the intestinal canal.

"So fully satisfied am I of the superiority of this plan of treatment, that I have repeatedly asserted, among medical men and others, that any given number of cases of continued fever, without regard to existing variations or complications, treated by a plentiful exhibition of stimulants and nourishment, with proper attention to the usual diarrhœa, would afford more successful results, than all other modes of treatment combined.

"Intercurrent inflammations are rarely to be apprehended in typhoid fever. There is in this disease an over-excitement, with co-

existing loss of vital power which produces a strong predisposition to *local congestions* with a degree of *sub-inflammatory* action. To obviate this condition of things, stimulants have a peculiar power, by invigorating the vital forces.

"I have frequently pushed this treatment to an almost incredible extent, and continued it for days and weeks, when fever and delirium were constantly present, with ultimate good results.

"In those cases in which the circulation was too much excited, I have frequently used the *veratrum viride*, and can testify to its value.

"When the pulse, as it did in some cases, became so rapid and feeble as to assume the character of a 'fluttering pulse,' this drug would reduce it to a normal state. *The oil of turpentine*, so highly recommended by Prof. Wood, was frequently used, but never with satisfactory results in typhoid fever. The nitrate of silver and chlorate of potash, have in my experience answered a better purpose.

"That form of fever which I have termed *mixed*, presented many of the leading characteristics of typhoid, yet differed essentially in some particulars. This difference consisted chiefly in the more rapid march of the disease, and in a regular diurnal remission, febrile exacerbations and perspiration. This form of fever yielded very readily to the sulphate of quinia, whereas this medicine exerted no control whatever over the progress of genuine typhoid cases.

"About the middle of November, the epidemic of typhoid fever ceased, and pneumonia of a decidedly typhoid type made its appearance.

"The spring months of 1858 were comparatively healthy, but about the beginning of summer whooping-cough set in, and rapidly spread over the country. It proved unusually fatal to young infants; the fatal complications being congestion of the brain, pneumonia, and infantile remittent fever. To this last complication I will make more special allusion than to the others.

"Not unfrequently, all of the children from a few months to twelve years old, in a family suffering from whooping-cough, would be attacked also with this form of fever. The approach of the disease was generally gradual. At first there was constipation; as the disease advanced diarrhœa supervened. Tympanitis was never absent, indigestion and lientery were generally present, and produced marked prostration and emaciation. The pulse was invaria-

bly rapid. There were regular daily remissions in the morning, with febrile exacerbations at evening, and copious perspirations at night. This free perspiration afforded no protection against a recurrence of the same symptoms. The secretions were always vitiated and depraved. In all seven cases nervous symptoms were developed; the urine was scanty, and loaded with solid material.

“In regard to the treatment of this disease, I wish to speak particularly of the inestimable value of the oil of turpentine, and sulphate of quinia. The first would, by acting on the universal mucous surface, relieve the cough, the lenteric form of diarrhoea, and the tympanitis, and finally produce a copious flow of limpid urine. In some instances the quantity of urine discharged was so great, that I could compare it, with truth, to the amount discharged in diabetes mellitus. This was usually an index of a change in the patient's condition, and of a subsidence of the attack. The quinia produced most happy effects, by relieving the paroxysms of fever.”

Typhoid fever is reported as prevailing to some extent in Hyde County, in 1859, by Dr. Cramer, and in Perquimans County, by Dr. Coxe, and in Franklin County, by Dr. Lankford.

The two first mentioned are extreme eastern counties bordering on the sea, and in an alluvial region but little elevated above the level of the ocean; the last in the middle region of the State.

On the authority of Dr. Hackett, of Wilkesboro', I am enabled to report the prevalence of typhoid fever in the county of Wilkes, in the most elevated mountain region of the State. He informs me that he has seen it prevailing on the very summit of the Blue Ridge, and under circumstances almost conclusively establishing its contagious character and marked by decided indications of putrescency of the fluids.

It would thus seem to be entirely independent of ordinary atmospheric conditions; prevailing equally and with equal intensity in the rare atmosphere of the mountains, and the denser air of the sea coast.

The foregoing facts and observations would seem to have established the point, that by a gradual and steady progress, typhoid fever has come to occupy the entire State, and that like the strictly zymotic diseases, it is irrespective of climate, of season, or of any known local conditions.

Like them, too, there would seem to be good grounds for concluding that it is, under certain conditions, a contagious malady.

There can be no doubt but that it is the same disease which has been so carefully studied and investigated in this country, by Drs. Gerhard, Bartlett, Flint, and others, and by Louis, Jenner, Budd, Stokes, and Tweedie in Europe.

Into the obscure question of its etiology and pathology, it would be out of place to enter in such a paper as this. The careful observations and well sifted facts of that industrious and systematic observer, Dr. Jenner, have only resulted in establishing its non-identity with *typhus fever*, to which in many of its features it bears so strong a resemblance.

The investigations of Dr. Budd have led him to infer that the intestinal lesion, which constitutes so uniform a feature in this disease, is a sort of introverted exanthem, the specific eruption of a contagious disease, and the intestinal discharges, the *materies morbi* by which it is propagated. Some of our American physicians have, I think, claimed to be able to detect what they have denominated the *typhoid element* in the intestinal discharges and to base their differential diagnosis of the disease on this symptom. Such views have, I think, been announced by Dr. McCaw, of Richmond, in the *Virginia Medical Journal*.

If, as Dr. Budd thinks, the intestinal discharges are the media by which typhoid fever is propagated, the conclusion of Dr. Jenner, that it is not the product of idio-miasma, is subverted by the observations of Dr. Budd, who, in tracing its contagiousness to a special excretion, has settled this point with regard to typhoid, quite as conclusively as has yet been done with regard to *typhus*, the contagiousness of which has not been proved to depend upon any particular excretion of the diseased organism.

When typhoid fever first began to prevail in the eastern section of this State, cases exhibiting the blending or commingling of this type of fever with remittent fever, were by no means uncommon, and in these cases it was necessary to keep in view its hybrid character, in the treatment; for such cases could not be well managed without the use of quinine.

Treatment.—As typhoid fever, like other diseases which run a definite course, has for the most part a tendency to terminate in a restoration to health, it is somewhat difficult to determine the value of remedies in its treatment.

Though, as a general rule, the *nimia diligentia medici* is to be avoided, we can still prescribe with advantage for such symptoms as appear to require attention, and if many cases are injured by

injudicious hypermedication, it is equally certain that many cases would prove fatal from the neglect of a proper use of remedies at the proper juncture.

Without attempting to enter *in extenso* into the treatment, I will content myself with referring to such remedies and modes of treatment as have recently been found useful, or which may possess the interest of novelty.

The *chlorate of potash*, it will be observed, is highly recommended by Dr. Whitehead, as having been of notable utility in the treatment of an epidemic of this disease, which prevailed in his neighborhood, and which had been marked by great fatality before this medicine had been resorted to. It has since then become a popular prescription throughout the State, and I believe it maintains its character with the profession generally.

The *oil of turpentine*, too, would seem to maintain the reputation which it has acquired in the treatment of the advanced stages of the disease. Dr. Kelly, of Rowan, tells us that, in treating the disease as it prevailed in his neighborhood, it was found useful to resort to it at an early stage of the disease and to administer it in larger doses than had been usual. He is of opinion that so administered, it exerted a prophylactic power against intestinal hemorrhage.

Bloodletting.—That bloodletting should be mentioned at all in connection with typhoid fever as a remedy, will strike many with unmingled surprise.

We must not, however, suffer our preconceived notions or our hypothetical views of the disease and its proper treatment, to blind us as to the existence of facts which do not accord with these views. Dr. Owen Hadley, of Richmond County, writes me, that for the last thirteen years, he has been in the habit of using the lancet in the treatment of the typhoid fever of his section of the State.

Finding the treatment ordinarily recommended by systematic and practical writers on the disease, utterly unavailing and seemingly worse than useless, he was led to adopt bloodletting as apparently indicated in all cases in which there were evidences of cerebral excitement, and finding that he was much more successful in the management of such cases than he had been before resorting to bleeding, he was induced to extend its use to other cases, and particularly to the hemorrhagic forms of the disease. His experience (he says) has satisfied him that hemorrhage from the bowels

particularly, is a very rare occurrence when bleeding has been practised early in the case.

However opposed to the commonly received views of the profession and the practice founded on these views, the use of the lancet in typhoid fever may seem, the experience of a calm discriminating observer and conscientious practitioner cannot properly be ignored.

It may be that the type of the disease which prevails in Dr. Hadley's section of the State is essentially different from the commonly prevailing form of the disease; or it may be that we have allowed our hypothetical views of the nature and pathology of the disease to influence us too strongly to the prejudice of bloodletting. Dr. Hadley does not contend that the duration of the disease is at all shortened by bleeding, but he insists upon it that the severer symptoms are mitigated and the cases conducted to a satisfactory termination in much larger proportion than when this remedy has been omitted. So essential does he consider bloodletting in the earlier stages of the disease, that he does not hesitate to pronounce it the remedy for which, in his experience, there is no substitute. Where it has not been practised, he states that, in a large number of cases, intestinal hemorrhage will come on in two or three weeks, and three-fourths of the cases terminate fatally.

Veratrum viride.—This agent does not appear to have been extensively used in the treatment of typhoid fever in this State; at least all the reports which I have received are silent upon this point. Most of the cases of typhoid fever, which have fallen under my notice since the introduction of the verat. virid. into use as a remedy for it, have not been characterized by any very remarkable frequency of pulse, and hence the use of this drug has not apparently been indicated.

Quinine.—In a disease of such protracted duration as typhoid fever, the blood and tissues become impoverished in consequence of the loss of the proper equilibrium, which should exist in the process of repair and waste, and hence the secretions must become abnormal and vitiated.

Whether it be true, as Dr. Casselberry maintains,¹ that quinine supplies food for the automatic nervous system, which presides over the function of nutrition, or not, its utility in the treatment of typhoid fever can hardly be called in question. This invaluable medicine seems to have the power of at the same time sustaining the tone of

¹ Amer. Jour. Med. Sciences, April, 1858.

the nervous system, while it calms vascular excitement, and though it is not entitled to the character of a specific, it can rarely be dispensed with in the treatment of typhoid fever at some stage of its progress.

Cold water.—Cold water must be regarded as a remedy of great value in the treatment of typhoid fever. It not only adds greatly to the comfort of the patient, but exerts a positive remedial agency in abating the febrile excitement. As an irregular distribution of heat is a notable feature in this disease, a very obvious indication seems to be to endeavor to equalize it as much as possible, and I know of no remedy equal to the steady use of cold water, in reducing morbidly increased temperature. When the head is too hot, a napkin wet with cold water should be wrapped around the head. When there is inordinate heat of the abdomen or thorax, similar applications should be made to them respectively. In the latter stages of the disease, when there is evident bronchial complication, the application of cold water to the chest would not probably be so safe, and under such circumstances sinapisms and epispastics are to be preferred.

As water is the universal solvent and depurative, it cannot be dispensed with, in the early stages of the disease especially. Indeed, it is indispensable in all its stages. Being the necessary vehicle for the introduction of the new material to supply the waste of the tissues, and for the removal of the effete material also, we are constrained to regard it as the great febrifuge which nature prompts us to adopt, and without which all other remedies would be of little avail.

SCARLET FEVER.

Scarlatina may now be said to be one of our regular epidemics. Very few years pass, without the occurrence of sporadic cases of this disease, and every three or four years we have it prevailing as an epidemic.

No section of the State can now be said to enjoy an exemption from this terrible pestilence. Like typhoid fever, it was for many years regarded by us of the eastern section of the State, as an up-country disease, and there are now living medical men who practised their profession in the town of Wilmington for twenty-five years without ever having encountered a case of scarlet fever during the whole of that period. Nor are there any historical or traditional accounts of its ever having previously prevailed here.

About the year 1835, it effected a lodgement in this place and has never since entirely relinquished its hold.

Within the last five years, we have had two epidemics of this fever in Wilmington, of considerable severity. In both epidemics the great majority of cases were of the milder type, but cases presenting the disease in its most malignant form were by no means rare.

Though more apt to prevail in winter and spring, I have known one epidemic to extend into the summer months and reach its culmination in June. It would thus seem to be quite as irrespective of season, as its congeners of the exanthematous class, rubeola and variola.

While it is one of the special diseases of childhood, adults are not exempt from it, and very young children, as far as my observation extends, are equally liable to it as those of a more advanced age.

The number of cases which occurred in the last outbreak of scarlatina as an epidemic in December and January, 1858, in Wilmington, was not very great; but the epidemic exhibited the usual variety of types, from the mildest form of scarlatina simplex to the most malignant anginose variety.

The anginose affection very rarely presented the gangrenous form. There was ordinarily swelling and erythematous redness of the soft palate, tonsils and uvula, with patches of exudation. Difficulty of deglutition, swelling of the submaxillary and cervical glands, were commonly present. A yellowish pasty coating covered the tongue, its edges and papillæ being fiery red. A profuse secretion of viscid mucus from the fauces, and a copious and acrid defluxion from the nostrils occurred in most forms of the disease. The exudative inflammation sometimes extended into the larynx, the patient dying with all the indications of pseudo-membranous croup. In a few cases the parotid gland on one side was swollen, and this soon came to be regarded as a very unfavorable symptom, for recovery was very rare after suppuration of this gland had taken place.

In a few cases, the disease was fatal in its incipient stages, the highly poisoned blood seeming to give rise to a rapid form of cerebral or cerebro-spinal meningitis with convulsions; or delirium soon succeeded by coma would come on, and the patient succumb without any obvious effort on the part of the system at reaction.

Although the general features of the disease were for the most part strikingly alike in all the cases, a case would occasionally

occur with some peculiar features superadded to the common *role* of symptoms, characteristic of the malady.

Thus, in one case a tendency to sloughing exhibited itself, in a well defined spot about the size of a dollar on the inside of one thigh, and after the slough had separated and some expectations were being entertained of the recovery of the patient, a gangrenous spot made its appearance on the instep of the same side, and the case terminated fatally, with the supervention of anginose symptoms on the twelfth day of the disease.

Dr. McKee, of Raleigh, reports in 1855, a form of scarlatina and measles combined, as prevailing in that city and neighborhood. His report states that so hybrid were these cases in their appearance, that in some instances it was difficult to discriminate between the two, or to determine which morbid element had the preponderance.

In the spring and early part of the summer of 1854, a similar form of the hybrid disease was of occasional occurrence in Wilmington. Measles was the predominant epidemic of the season, and some of the cases were of an unusually severe character.

In a small number of instances, the disease assumed the congestive type. The virulence or the amount of the poison seemed so to prostrate the vital forces, as to preclude any effort at reaction. Death seemed in such cases to be the result of an apparent paralysis of the peripheral branches of the ganglionic system of nerves, and of the capillary vascular system dependent upon them, and a general coldness and lividity of the extremities, and of the entire superficies of the body rapidly ushered in the fatal termination; the nutritive calorific and blood-depurative functions being apparently simultaneously arrested.

A large number of the cases in all of our epidemics were followed by the ordinary sequelæ of the disease. Anasarca and ascites were not uncommon, attended with albuminuria and in some cases with hæmaturia, indicative of great vascular congestion of the kidneys, and requiring local depletion and the use of the milder diuretics in its treatment. Deafness, and occasionally otorrhœa occurred as sequelæ; suppuration of the parotid and submaxillary glands now and then occurred, with profuse suppurative discharge.

Uremic Eclampsia.—This is a very rare sequel of the disease, and a very formidable one. It is more apt to follow mild than severe cases of the disease. In cases in which the cutaneous efflorescence is slight, the blood would seem to be less thoroughly depurated of

its poisonous element, and severe sequelæ are more apt to result. These cases are marked by puffiness, or œdematous intumescence of the face, and by remarkable drowsiness, almost amounting to stupor. The urine is scanty in quantity, highly albuminous, turbid, depositing in some cases a sooty material, having the appearance of broken-down blood-globules, or there may be hæmaturia, clear florid blood passing off with the urine.

If this condition of the kidneys is not soon relieved by appropriate treatment severe convulsions follow, resembling in every particular the convulsions of puerperal eclampsia.

Dr. Cox, of Perquimans County, reports the prevalence of scarlet fever in his neighborhood, in the months of January and February, 1858, in a mild form at first, but about the first of March assuming a graver type, and diffusing itself more extensively.

In some families it assumed the malignant form, and carried off its victims in a few hours from the overwhelming influence of the poison on the nervous system, which completely prostrated them in the first stages of the disease. In other families, the disease assumed a mild form, and the patients required but little treatment. Whichever type of the disease made its appearance in a family, that type was apt to run through the family, whether it was the simple, the anginose, or the malignant type.

Treatment.—As regards the treatment of scarlet fever, I have but little to say. The milder forms of the disease got well with little or no treatment, the severer type was not amenable to any treatment I could devise. Almost all the remedies which have been recommended in systematic treatises and in the periodicals have in turn been tried, and with negative results in all cases. In the anginose variety, bleeding, either general or local, has not been practised of late years, as they have been found not only useless, but hurtful.

This was not the case when the disease first invaded this locality (Wilmington) in 1835. Bleeding was then found to be decidedly useful if practised early, and evidently mitigated the severity of the subsequent fever.

Of late years, a tonic and supporting treatment has generally been practised, and diffusible stimuli resorted to at all stages of the disease.

Emetics were useful in dislodging the viscid mucus from the fauces, and were generally resorted to in all cases complicated with bronchitis.

Sulph. quinine with infusion of serpentaria and capsicum was occasionally used with seeming benefit.

Nitro-muriatic and acetic acid and the chlorate of potass were also freely used.

But, upon the whole, the results of treatment were by no means satisfactory. If the dose of the poison received into the system happened to be greater than could be thrown off by the skin and mucous surfaces, it was almost as certainly fatal as is the virus of the crotalus or that of the cobra di capello.

CEREBRO-SPINAL MENINGITIS.

Dr. W. R. Sharpe, of Davie County, reports that this epidemic appeared in his neighborhood in March, 1856, the spring succeeding the first of the two cold winters, the severity of which has distinguished them from any others for the last fifteen years.

This epidemic to me (Dr. Sharpe) is striking. First, from its novelty; secondly, from its fatal tendency; and thirdly, from the rapidity with which it runs its course. The same disease prevailed in 1857, but was much milder and more manageable than it was on its first appearance. According to my observation, the age most liable to be attacked was from fifteen to twenty-two years old; there were many younger, but not many older persons attacked. Children from two years old and upwards were not exempt.

In some instances the attack was sudden, the patient at once complaining of violent pain in the head, and in a short time would in most cases be insensible, and in a few hours fall into convulsions, death following in many cases in from six to twelve hours. In other cases, especially among those from fifteen to twenty years old, the patients would complain of slight pain in the head, with some indisposition, for three or four days; and then would suddenly complain of severe pain, and fall in attempting to walk, and in a short time become insensible, either talking incoherently, or lying in stupor. In this condition he might remain twelve or eighteen hours; but in many cases convulsions ensued earlier than this, and even death. If called early, on approaching the patient he would probably be found with flushed cheeks, full and bounding pulse, with one eye looking a little watery and its conjunctiva slightly injected and inflamed. In most cases the patient would describe the pain as being confined to one side of the head, in one temple, or over one eye.

If the case is about to prove successful, the patient may complain of violent pain in one ear, or the eye and side of the face will become swollen. Either of these occurrences (and especially the latter), I hail as a favorable omen, as it is evident that the brain and its membranes are being relieved, and that the disease is becoming external. The swelling of the face or the pain in the ear soon subsides, and the patient is convalescent.

The swelling of the face (which is erysipelatous in its character), is one of the best evidences that the disease of the brain is of a like nature. After convulsions come on, there is no flush of the cheek, and the temperature of the surface is but little if at all elevated; on the contrary it is often cool and pale, while the pulse is but little affected, except as to frequency. As evidence of the rapidly fatal nature of the disease, I may state that I have known a young and apparently healthy lady, take a ride in the morning, return, and before twelve o'clock complain of some pain in the head, in a few hours become insensible, and before midnight a corpse. I have also been called to a young man, who had complained of some pain in the head for three or four days, and seemed indisposed to move about or take exercise, or to pay attention to what was passing about him, yet give no uneasiness to his friends or family, until, on the third or fourth day, he suddenly complained of violent pain in the head, fell helpless and insensible to the floor, and whom I found on my arrival, with one convulsion after another, continuing until death.

This disease struck terror to the neighborhood when it first appeared. I was myself shocked and confused with the first few cases, which appeared as sudden and overwhelming as an avalanche. I have seen this disease commence with the father of a family, and in four days attack six children, one after another (leaving only the mother and a sucking child untouched), each appearing to be in perfect health an hour before the attack.

I have not been able to learn that this epidemic appeared in any part of the country prior to its breaking out in this county. The northern part of this county, which did not suffer from this epidemic in the spring of its first appearance here, was attacked in the early part of the winter following. In the county north of this and immediately adjoining the latter neighborhood, in the following spring, it proved quite fatal. We had a recurrence of the epidemic in the spring of 1857; but for the most part only in those neighborhoods which were in a measure exempt during the spring of

its first appearance. It was of much milder type, showing itself in many cases of swelling on one side of the face at the onset of the disease.

This disease differs from ordinary inflammation of the brain and its membranes—first, in that it prevailed as an epidemic; secondly, that only one side of the head was in most of the cases complained of; thirdly, that there was swelling on one side of the face, in very many cases as the disease was giving way, and in some cases from the onset, and especially so as the epidemic was subsiding; and fourthly, that the very hot and dry skin, which is rarely wanting in the first stage of ordinary inflammation of the brain, was rarely, if ever, found in this disease.

I have not been able to learn much of the treatment of this epidemic, by the various practitioners who have had it to manage; but so far as I have learned, the treatment has been various, and the success equally so. I must therefore be permitted to give my own treatment of it as it appeared during the first spring of its prevalence, viz., in 1856.

When called to children, if I found them rational, I usually commenced the treatment with an emetic of ipecac and followed this with a large dose of rhubarb and calomel, directing the dose to be repeated, or followed by castor oil in a few hours, if the first did not act promptly and actively. After which I kept up pretty active purgation with calomel and rhubarb, and gave sudorifics in the interval until the disease gave way. If I found the little patient, as I frequently did, insensible, I at once gave it a large dose of calomel, and followed this in two hours with as much croton oil as I thought it would bear. This, if the child had not fallen into convulsions, would rarely fail to restore it to consciousness; after which a milder course of purgation was continued, until the little patient was convalescent. Adults, and those over ten or twelve years old, if the cheeks were flushed, the pulse full and strong, and a good deal of heat of surface, I frequently bled; but I found it important to be very careful in the selection of cases for the lancet. To bleed while the surface was cool, although the patient was insensible, was apt to prove injurious, if not fatal.

When the attack seemed violent, and especially if I found the patient talking incoherently, or lying in a stupor, whether I bled or not, I gave the patient at once a full dose of calomel, and followed it in from two to four hours with as much croton oil as I thought he would bear. This I repeated sooner or later, according

to the symptoms, but always by the next day. I think I never found it necessary to give the croton oil after the second day; then a milder course of purgation, with calomel and some vegetable or saline purgative was continued, with tartar emetic and sudorifics.

I could not discover that the cases which I bled did any better than those which I did not bleed; but when I did not bleed, the more active purgatives were used. I soon learned therefore to bleed but little in this disease. Active purgatives were my chief reliance.

After I had fully adopted this course and diligently and perseveringly carried it out, I had no reason to change the treatment, as it was entirely successful. So far as I have been able to learn, those who adopt a milder and less active course were less successful.

When convulsions have just supervened before I saw the patient I at first bled, cupped, and scarified, gave croton oil and blistered the occiput, but never with success, as I now remember. I finally made it a rule to do but little, after convulsions had fully set in. No case in my practice lasted more than twelve hours after convulsions came on.

The second epidemic, that of 1859, was much milder, and consequently required a much less active treatment; but even here I found purgative doses of calomel a very important part of the treatment. In no disease which I have ever treated, have I found calomel and active purgatives so imperatively demanded and so well borne.

As tinct. of chlorid. of iron is acknowledged to be a very important remedy in the treatment of ordinary erysipelas, it may be asked why I did not adopt this as one of the chief medicines in the treatment of this disease, which I considered to be erysipelatosus in its character. My answer to this would be, that owing to the delicate structure of the parts attacked, their vital importance to the economy, the violence of the disease, and the rapidity with which it moved to a fatal result, I feared to trust a medicine so slow in its effects.

I believe I might have used it to advantage in the epidemic of 1857, when the disease was milder and less rapid in its course. The treatment, however, which I adopted after the first two or three cases, in the previous epidemic, was so satisfactory in its results, that I had no reason to change it, but simply to modify according to the diminished severity of the case or the strength of the patient.

Dr. H. Kelly, in his report of the diseases most prevalent in

Iredell County in the years 1856 and '57, makes mention of a cerebro-spinal meningitis which prevailed epidemically in that county during the winter and spring of 1856. In some neighborhoods it was very fatal, patients frequently dying within thirty-six hours after the attack. The majority of those who died only withstood it for from forty-eight to seventy-two hours. If they passed the latter period convalescence took place slowly.

The treatment adopted in the early stage of the disease, was bleeding, cupping, and blistering to the back of the neck and along the spine. Internally, small doses of calomel and ipecac were administered every third hour for fifteen or eighteen hours, particularly if there was constipation or a want of healthy action of the liver, which I always found to be the case.

It is of the utmost importance to push the mercury to the extent of producing its constitutional effects, if the disease is not speedily subdued. After the inflammatory symptoms have subsided, the exhibition of quinine, combined with small doses of ipecac, and occasionally with opium or morphia, will do much good. Hot mustard pediluvia were very serviceable in restoring warmth to the cold extremities and aiding reaction.

Dr. J. J. Summerell, of Salisbury, reports: "An occasional case of cerebro-spinal meningitis I have now and then seen, during my whole professional career (of nearly fifteen years); but only during the spring of 1856 have I observed this disease to assume anything of an epidemic character.

"At that time, however, during the months of March and April more especially, there was a great prevalence of what we had been accustomed to call *catarrhal fever*; a disease very closely resembling that usually described as such in the books. Many of the children and youth of the community were the subjects of its attack.

"The leading symptoms were drowsiness, heat of skin, rapid, but rather feeble pulse, dry and slightly furred tongue, sordes on the teeth, much prostration of the muscular strength, great oppression of the nasal passages, which were dry, and in most cases without any secretion whatever, and such a turgid condition of the Schneiderian mucous membrane as to render respiration through the nostrils painful and difficult.

"When aroused, the patient complained of most intense pain in the region of the frontal sinuses. There were always marked symptoms of catarrh, though by no means sufficient to account for

the great amount of constitutional disturbance present. The bowels were generally confined, though sometimes unnaturally loose.

"This condition of the patient would last for one, two, or three days; with little or no alteration, when very generally there was observed a small red spot on some part of the face, most frequently on the eyelids and temporal spaces, slightly tumefied at first, but increasing rapidly, and in some instances becoming so great as to close the eyes in a few hours. In every case in which this swelling or eruption was well marked, there was a speedy amelioration of all the graver symptoms, and convalescence dated from that occurrence.

"This manifestation of disease on the skin was unmistakably erysipelalous in its character, and gives a satisfactory clue to the nature of the epidemic. A large proportion of the cases terminated with a slight erysipelalous eruption on the face; and as they every one without exception recovered, this event was hailed by the medical attendant as the sure ground upon which to base a favorable prognosis.

"But it was not always our good fortune to behold this joyful harbinger; for, occasionally, cases would occur in which there were no external evidences of erysipelas, but bronchitis or pneumonia would take the place of the eruption, and these cases, under judicious treatment, as a general thing did well.

"The treatment, however, most usually successful in common asthenic thoracic inflammation was for the most part inadmissible here, and our chief reliance in their management was on the stimulating and supporting plan, modified according to circumstances, and combined with such mild mercurial impressions as the asthenic character of the disease would permit with safety.

"But there was another class of cases (and it is to these that the attention of the profession is particularly directed) which supervened upon the early symptoms described; and which, from their fatal termination and the peculiar features they developed, gave this epidemic its importance, and made it a subject of such deep interest to the physician when it prevailed.

"In these were developed all the leading symptoms of cerebro-spinal meningitis. The sleep gradually advanced to coma, or the pain over the brow, increasing to a most excruciating agony, soon gave place to the wildest delirium. The pupils of the eyes became in some cases so permanently dilated as either to destroy or greatly impair the vision. In other cases they were closely contracted.

There was more or less stiffness of the muscles of the neck, and a disposition to opisthotonos was observed in one case. The poor victim soon lost all consciousness, and gradually sank as the functions of the brain and spinal marrow were more and more deranged, or, as I saw once, general convulsions ended the scene.

"Such was the termination of some of the cases of this epidemic, a disease at its commencement, precisely similar to the one we are accustomed to call *catarrhal fever*; but widely differing in its sequelæ and results. It is needless to say that these brain-cases almost always proved fatal. Cerebro-spinal meningitis, occurring under the most favorable circumstances, is a very fatal disease; but as it presented itself in this epidemic, not one well marked and well authenticated case recovered out of some twenty cases occurring in the practice of the physicians of Salisbury. If there were any recoveries I did not hear of them. In my own practice, there were none out of six cases."

Since the year 1856 erysipelas has prevailed more extensively in Rowan and Cabarrus counties than was ever known before, but cases of cerebro-spinal meningitis in any way connected with it have seldom occurred. But whenever it has supervened on erysipelas, it has been alike fatal, proving an opprobrium to the healing art.

At first, of course, this disease gave rise to a good deal of discussion among the members of the profession and some diversity of opinion as to its nature. But as opportunities for observation were multiplied and the epidemic more diligently studied and carefully analyzed, professional belief seemed to become unanimous, that these brain cases, as well as those of bronchitis and pneumonia following these early symptoms of catarrh as described, were no less of an erysipelatous character than were those where the eruption manifested itself on the face.

The question as to why this form of inflammation of the brain should be so much more fatal than the ordinary epidemics of cerebro-spinal meningitis, as they have prevailed in this country and in Europe, which are described in the books, finds in my mind a satisfactory answer in the nature of erysipelatous inflammation.

It is not only a contagious and specific, but also an asthenic inflammation or disease, and is always associated with depression of the vital functions and great vitiation of the blood. Every practitioner will attest that erysipelas is more fatal than ordinary sthenic inflammation even when it attacks the external surface, although

the pressure of the products of inflammation on important organs, or their confined situation does not here necessarily offer an insurmountable obstacle to the curative powers of nature. But when occurring in structures surrounded by unyielding bony walls inclosing the brain, the very centre of life giving power, it seems to me not at all surprising that this disease should prove so fatal.

I have had no opportunity of making autopsies, and therefore cannot speak of the *post-mortem* appearances. But remembering that the disease is erysipelas occurring within the cranium, I think we may infer, that were such examination made, we should find more diffuse inflammation of the membranes, greater tumefaction of the tissues, and a larger amount of serum effused than in sthenic inflammation, besides other products of an unorganizable nature, wholly unaccompanied by any curative adhesive process. Hence, we argue the almost necessarily fatal character of the disease, in spite of the best directed efforts in the way of treatment.

Before closing this notice, it may not be improper to say something of the treatment pursued; and a few general remarks must suffice.

When called to cases of catarrhal fever as described, at an early period of the attack, an active purgative of calomel and jalap was usually followed by some relief to the distinctive symptoms. The impression thus made we endeavored to keep up by an occasional small dose of the sub-muriate, and to moderate the force of the heart's action, by small doses of emetic tartar; or, in cases in which there was irritability of the gastro-intestinal mucous membrane, ipecac.

It was observed that as soon as the nasal secretion became free the severe head symptoms abated in a marked degree. To assist in bringing this about and to maintain it afterwards, a small flannel bag, filled with fresh hops, and steeped in hot water, was laid over the brow, and secured in its place by a napkin or cloth thickly folded to prevent a too rapid escape of warmth and moisture.

Under such a course of treatment in the beginning, and quinine in the latter stages, when the fever was remittent, as it was apt to be, the patients soon recovered. When graver symptoms made their appearance, constituting pneumonia or bronchitis, the treatment, as before intimated, had to be conducted on the supporting and stimulant plan, rather than by depletion and depressing agents.

When the membranes of the brain and spinal marrow became the seat of the disease, local or general depletion, in some cases

which seemed to require it, calomel, mercurial alteratives, blisters to different parts of the scalp and spine, and the hyd. potass. were the remedies usually tried, but were all alike found to be unavailing. The patients died in almost every such case, while the treatment seemed to exercise no influence whatever in postponing the fatal issue.

The muriated tincture of iron, which seems to exert an almost specific influence over erysipelas occurring in other parts of the body, I was deterred from using by a remark made by Professor Barlow in relation to it in such cases. He says (speaking of the treatment of erysipelas), "in severe cases, where there is no head affection, the sesquichloride of iron, in doses of ten minims of the tincture, three or four times a day, appears to be almost a specific."

But after some reflection on the subject, I am persuaded that there is no sufficient reason for withholding the remedy, notwithstanding the warning of the Professor; because all other modes of treatment have effected next to nothing in staying its destructive power.

DYSENTERY.

Dysentery, like the preceding epidemics of this State, prevails throughout its entire extent, from the mountains to the sea shore. Dr. Hackett, of Wilkesboro, on the summit of the Blue Ridge, describes it as a prevalent disease in that region; Dr. McKee, of Raleigh, reports it occurring in the middle region of the State, while Dr. Cox, of Perquimans County, in the extreme east and on the sea shore, describes it as one of the ordinary epidemics of that portion of the State.

The type of this disease has been a mild one for some years past, at least so far as it has prevailed in this city (Wilmington) and as reported to me from other localities. It is a rare thing of late to meet with those formidable cases, which were of frequent occurrence twenty years ago, and which approximated in severity to the tropical forms of the disease, as described by Johnson and Annesley.

In this locality, it prevails most generally in the months of June, July, and August, and seems to be ordinarily concurrent with intermittent and remittent fevers. Some of our physicians, indeed, are inclined to regard it as a malarial disease, and to attribute it to the same cause which they regard as productive of remittent and

intermittent fevers, with the superaddition of some modifying circumstance, which determines the expenditure of its force on the mucous surface of the large intestines.

This view of its etiology can hardly be regarded as tenable at present, when we consider that it prevails in the mountain district, where as yet intermittents and remittents never originate spontaneously.

For the present, we must regard it as the result of a widely spread atmospheric distemperature, or of causes which are not limited to any particular locality in the State.

This disease is for the most part amenable to treatment, and yields readily to a combination of laxative and anodyne medicines; and as the liver is generally supposed to be implicated in the morbid action which is going on in the system, mercurials are usually selected as the laxative ingredients in the prescription. If not used indiscriminately or pushed too far it must be admitted that they are useful and perhaps at times indispensable remedies in the treatment of this disease, but they are not now used as freely as they formerly were in the treatment.

In some decidedly severe cases I have recently seen good results from the use of large doses of ipecac, as recommended by a writer in a late number of the *London Lancet*. By premising an opiate the stomach can be made to tolerate it in large doses, by which means it is rendered decidedly more efficient than when used in the small nauseating doses in which it is more commonly administered.

In the more advanced stages of the disease, bals. copaiba, in combination with mucilage of gum Arabic, and tinct. opii, is found to be serviceable. With some of our physicians, acet. plumb. with opium is a favorite prescription under such circumstances.

CHOLERA INFANTUM.

This is one of our confirmed endemics, and is apt to prevail epidemically both in spring and autumn. Like dysentery, this is regarded by many as belonging to the same generic class of maladies of which intermittent and remittent fevers constitute the type. There would seem, however, to be very little foundation for such an opinion. The mere circumstance of their prevailing concurrently, can hardly be esteemed a satisfactory reason for assigning to them the same origin.

To some extent, indeed, the same causes may be regarded as co-operating in the production of both classes of disease. This is probably true as regards high atmospheric temperature, which may be regarded as essential and common to both fevers and cholera infantum. Sudden changes of temperature may also be regarded as equally operative in the production of both forms of disease.

Beyond these, however, there are probably no causes which can be regarded as common to both classes of maladies, and what may be the occult causes which determine the one or the other form of disease will probably continue to be a matter of speculation.

Of course, the time of life is one of the conditions which is peculiar to cholera infantum. Errors in diet also are more directly efficient exciting causes in cholera infantum than in fever, though not without influence in the latter form of disease also.

In almost all the cases of this disease, the stomach is relieved of its irritating contents by spontaneous vomiting, so that the first indication which generally presents itself, is to quiet the irritation of that organ and of the bowels, and at the same time gently relieve the latter of any offending matter which they may contain.

This may generally be accomplished, not by opiates, but by the milder mercurials, such as hydrarg. c. cretâ, or the sub-muriate of mercury. The calomel I have generally found to be most certain and efficient.

After the operation of the mercurial, the treatment must consist in the proper regulation of the diet, with the use of antacids, absorbents, opiates, and astringents, as may be indicated by the symptoms. In very severe cases, opiates are essential very early in the treatment of the case; but as a general rule opiates are not productive of benefit in the early stages. In protracted cases they constitute, together with diffusible stimuli, our chief dependence.

STOMATITIS.

This disease prevailed so extensively in the early part of the summer of 1858, as to be fairly entitled to the character of an epidemic.

The most common form which the disease assumed, was the aphthous or follicular; some of the cases took the form of simple erythematous inflammation of the buccal mucous membrane.

One case of the pustular variety of the disease occurred, in which

the tongue and mucous surface of the mouth were covered with pustules resembling very much the pustules of variola discreta.

I saw no cases of the diphtheritic or pseudo-membranous form of the disease, nor have I been able to hear of its prevalence in this form in any other part of the State.

A few of the cases were attended with slight febrile disturbance and headache, with gastric disorder. As there was usually some constipation, a mild purgative was ordinarily prescribed, and as the complaint was generally attended with symptoms indicative of acidity of the stomach, the common eccoprotic rhubarb and magnesia was the formula generally selected.

If the case was at all obstinate, an emetic of ipecacuanha would often exert a salutary influence.

Astringent washes and the occasional use of a solution of the nitrate of silver, constituted the local treatment.

It may not be amiss to notice, as evincing a very peculiar and unusual *epidemic constitution of the atmosphere*, that about the period of the prevalence of this epidemic stomatitis, a disease bearing some resemblance to it, originated and prevailed very extensively among domestic cattle, and among some of the *feræ naturæ*, a form of fever very fatal in its effects, and whose most striking characteristic was an inflamed, ulcerated, and sometimes gangrenous condition of the tongue.

During the prevalence of this epidemic, the hunter very frequently came across the carcasses of deer in every stage of decomposition and with the characteristic black mouth.

JAUNDICE.

This disease has frequently, of late years, assumed the epidemic form and prevailed extensively. The year 1847 was characterized by the extensive prevalence of jaundice, in this city (Wilmington), in the summer and autumnal months. There was at the same time a remarkable exemption from the ordinary climatic fevers of the season.

Whether the morbid cause, or causes which ordinarily produce intermittent and remittent fevers, had any agency in the production of the epidemic icterus, I will not undertake to determine. It may well be regarded as highly probable that it had, inasmuch as the jaundice seemed to replace the ordinary endemic diseases.

If we are correct in ascribing it to such agency, it furnishes a

rare example of the action of the morbid cause of fever, on a single organ of the body.

The summer and fall of 1847 were not remarkable for any striking meteorological peculiarities which could account for the appearance or production of the disease. Its type was for the most part very mild, but few persons being confined to bed with it, and in many cases it was treated by domestic remedies alone. A mild mercurial cathartic or an emetic seemed to be all that was required in the great majority of cases. The more obstinate cases yielded to the iodide of potass. In some cases quinine was found to be a useful remedy.

Dr. Whitehead, of Salisbury, reports that in September (1858), an unusual number of cases of jaundice occurred in the practice of the physicians of Salisbury and in the county of Rowan. The first cases were amongst some negroes employed on a brickyard in the suburbs, and the hands employed on the North Carolina and Western Railroad.

"We soon found, from the numerous cases occurring in town and county, that we had an epidemic to deal with. The first symptoms were great pain in the right and left hypochondriac regions, extending round the body, and in some cases over the whole abdomen; nausea and vomiting, bowels constipated, urine loaded with bile. Cups, mustard plasters, and warm fomentations to the abdomen, a large dose of calomel and opium, followed in a short time with either a dose of castor oil and turpentine, or cream of tartar and jalap, soon relieved the pain.

"In a few hours after the bowels were opened, the patient would be jaundiced. No biliary calculi were passed that we could discover. The disease seemed to depend upon gastro-duodenal irritation, or a clogging up of the biliary ducts with inspissated bile. So soon as the patient was well purged, the free use of taraxacum, soda and nitre, with an occasional purgative of cream of tartar and jalap, completed the cure.

"There were two fatal cases; both women in childbed. One died in twenty, the other in twenty-six hours after the birth of the child. Not a drop of urine was secreted in either case after the birth of the child."

Dr. Bedford Brown, of Caswell County, reports "that jaundice prevailed epidemically in that region of the State, in the year 1857, accompanied in some instances with remittent fever. Active mer-

curial cathartics, and sulph. quinine, when fever was present, usually afforded relief.

"I consider this epidemic of jaundice as a line of demarcation between the typhoid and active inflammatory types of morbid influences in our region. Since its disappearance, we no longer fear the adoption, or doubt the propriety of using antiphlogistic remedies."

Dr. Wm. Cramer, of Beaufort, in Hyde County, reports the extensive prevalence of jaundice in that place, in autumn of the year 1857. He says, in the early part of November, a disease of an epidemic character was developed to an unusual extent. "I think I may safely say that one-half, if not two-thirds of the adult population of this town and vicinity, are or have been affected by it. This disease is jaundice. Very few under twenty years of age have been attacked; but between twenty and thirty many, between thirty and forty more, and between forty and fifty still more.

"This disease generally came on gradually, with depression of spirits, languor, and watchfulness, bowels constipated, tongue thickly coated with a yellow covering, sometimes dry and whitish yellow. Alvine evacuations light or clay colored. In very few cases there was vomiting, in many there was nausea. Very little pain in most cases, but a sense of constriction about the epigastrium and abdomen (to use the expression of persons affected), as though a wide band or belt was pressing against them. The urine was generally very thick and muddy, and sometimes of a deep mahogany color, the conjunctiva yellow, and a dusky yellowness of the whole body. In some cases, there was great itching of the surface.

"All of the cases yielded readily to treatment, and I have heard of none proving fatal.

"The usual treatment is to give a dose of comp. cathart. pills, followed by rhubarb and magnesia if they fail to operate well; then comp. tinct. of rhub. and aloes, twice a day, to keep the bowels free. If necessary, in a day or two to repeat the pills. The first operations from the pills are dark and tarry. When the evacuations show bile, continue the tincture, and give acid. nitric. ten drops three times a day; sometimes a large dose of pulv. Doveri at night. In a few cases I have given a full dose of calomel and Dover's powder at night, and followed it by rhubarb and magnesia in the morning.

"This disease between the early part of December and the middle of January, had nearly or quite subsided; but about the middle

of February, it commenced again, and is still prevailing at this time (March) as extensively as before.

"There has been nothing in the weather which I can assign as a cause for the prevalence of this form of disease. The winter has been mild, with no more than the usual quantity of rain.

"It may be proper to state, that pneumonia has been more prevalent than usual during the months of December, January, and February, and attacked persons in preference who had been jaundiced.

"In submitting the above remarks, it is natural to inquire what peculiar state of things has produced this almost universal jaundice, as it is certainly of very rare occurrence.

"During the fall and early part of the winter, as stated before, a universal predisposition to typhoid fever existed, producing such depression of the nervous system and such torpor of all the secretory organs, that the ordinary changes of temperature, aided by the indolent habits of the inhabitants of this town and vicinity, were sufficient to favor its development of the disease. From the foregoing considerations, it is evident to my mind that jaundice, when it prevails epidemically, has its origin in the brain and nervous system. The nervous energy being withheld from the moving forces of the system, the bile is either deteriorated or lessened in quantity, or obstructed in its passage into the duodenum.

"In dyspepsia we find the same principle holds good. After strong emotions of the mind, or after intense effort at study, or dwelling intensely on one subject, the nervous energy necessary to carry on the healthy operations of the stomach and digestive organs is suspended, or withheld from these organs, and they are all disordered and the disease readily developed.

"Taking this view of the subject, I am led to believe that the peculiar condition of the nervous systems of our citizens, from the predisposition to typhoid fever, has subjected them to the disease in question, from the slightest exciting causes."

Dr. A. B. Pierce, of Halifax County, reports that there was one disease which, from its rare occurrence as an epidemic, deserves some notice. This disease is jaundice, which prevailed in September and October of 1858 in the town of Halifax. It was confined almost exclusively to the town, and there were some twenty-five or thirty cases in a population of two or three hundred. From what we could understand, it presented the usual characteristics of the

disease, only it seemed to be the essential disease, the primary affection, instead of the sequel of some other disease.

In some cases it set in with chill and fever, which lasted for several days, and in others there seemed to be little or no fever during the whole time of its continuance. There was scarcely any form of malarial disease prevailing during the same season, with the exception of a few cases of continued or typhoid fever. It is worthy of remark that the first case occurred in the person of a stranger who came to the place with it.

The treatment was the same usually pursued in jaundice.

PNEUMONIA.

This disease must be regarded as the great endemic of the winter and spring seasons of the year, in this State, prevailing in all parts of the same, whether on the seaboard, on the plains, or in the mountains, and prevailing so extensively in almost every year as frequently to be fairly entitled to the character of an epidemic.

It assumes, too, all the varieties of the malady known and described by systematic writers, from the most exalted form of sthenic inflammation to the gravest type of the adynamic and congestive varieties. For the most part, *of late*, the type of the disease has been subacute in its character, rarely acquiring the very active depletory and antiphlogistic treatment which was deemed necessary in years past.

The great majority of the cases now occurring may be treated without resorting to the use of the lancet. Local bleeding, antimonials, and recently the *verat. viride*, seem to be capable of controlling its progress, and yet cases are continually occurring which cannot be safely or prudently managed without the use of general bloodletting.

To attempt to ignore the experience of the profession in all ages and in all countries, as to the efficacy of bloodletting (and its indispensable necessity in some cases) in the treatment of acute inflammatory disorders, is altogether idle.

The deservedly high reputation of Dr. Bennett, of Edinburgh, and Dr. Todd, of London, who seem to consider the use of this remedy as opposed to all sound pathology, should not weigh a feather in the determination of the *general* question, whatever weight we may be disposed to give it in reference to the particular

type of inflammatory diseases which have prevailed in their respective localities.

It would surely be very unsafe for us in this country to treat pneumonia or pericarditis with brandy and ammonia instead of bleeding and antimonials, on the authority and recommendation of London and Edinburgh physicians, except in those rare cases, or epidemics which now and then occur, and which are characterized by prostration of the vital forces amounting almost to collapse.

We have in the *veratrum viride* (a medicine recently introduced into practice) a remedy of great efficacy in the treatment of pneumonia, and one which may in many cases safely supersede the use of the lancet; but certainly not in all cases.

When the inflammatory action is of a high grade, as indicated by a sharp quick pulse, and great heat of skin, bloodletting both general and local will, I apprehend, still be found indispensable.

I have certainly found it to be so in many cases, and I have repeatedly found the *veratrum* to fail in the exercise of any salutary influence. In one instance, even as an auxiliary measure, after general and local bleeding it failed to subdue the vascular excitement, although it was perseveringly used for forty-eight hours.

In reference to the use of bloodletting in pneumonia, it will be well for us to be governed by the wise injunction of Chomel, not to treat diseases, but to treat patients affected with disease, and to endeavor to adapt our remedies to the special requirements of the case before us. By so doing we will be very apt to avoid extremes of opinion and practice, and fall into that "middle way," in which safety is generally to be found.

In some cases of puerperal pneumonia occurring in my practice, I have found the *tinct. verat. virid.* a very valuable remedy. This complication is a very formidable one, the cases often proving fatal under any form of treatment.

In one instance in which the lancet did not appear to be indicated, the case was treated by the *veratrum* alone, with the exception of an occasional dose of *pulv. ipecac. cp.*, and thus conducted to a favorable issue. In another instance of the same form of pneumonia, it was deemed necessary to bleed freely and to repeat the bleeding, after which the *veratrum* apparently aided materially in the successful treatment of the case. Dr. Bedford Brown, of Yanceyville, Caswell County, reports an epidemic of typhoid pneumonia, which prevailed in the winter of 1857-8, and spring of 1858, in

that county. The paper describing this epidemic was published in the *Am. Journ. of Med. Sciences* for October, 1858, from which I extract it as presenting a rare form of the disease.

"The winter and spring months of 1857 and 8 were characterized by much wet and changeable weather, which gave rise to a very extensive epidemic of malignant typhoid pneumonia. About forty cases came under the observation of my partner Dr. Roan and myself. The access of the attack was generally sudden, and with but little premonition; the victim having been in the apparent enjoyment of health but a few hours previous. The earliest symptom was an acute pain in some part of the body, sometimes in the head or chest, shoulder, hip-joint, and occasionally in the foot. This was followed in rapid succession by a distinct chill, which frequently lasted for hours, and was always attended with excessive vital prostration. It was not uncommon to find a patient twelve hours after the first accession of the chill, with his system sinking down without the first effort at reaction. The pectoral symptoms were not usually troublesome. The patients complained more of simple uneasiness than actual suffering or pain. In fact, the nervous sensibilities were too much blunted by morbid influences to feel conscious of diseased sensations or impressions. This destruction of the nervous energies and sensibilities, and want of consciousness, was a remarkable feature in the disease.

"Another alarming and constant concomitant symptom was vital prostration. In many, the constitutional power seemed to be too low to generate a reactive fever. Patients remained cold, almost pulseless, and unconscious for days, and were only sustained, even at this low point, by powerful stimulants, before any improvement in the symptoms occurred.

"In all cases, without an exception, the pulse was remarkable for two characteristics, extreme feebleness and diminution of volume, while it varied much in frequency, often at one hundred and fifty, and not unfrequently at seventy. In one patient, I observed it at several of my morning visits at forty, while in the evening it numbered about seventy. Frequently patients would be found early in the morning without any perceptible pulse, and unconscious. This I witnessed in several instances, and all reacted under the influence of active and plentiful stimulation. I have never observed any disease, in my own experience, in which the powers of life can ebb so low and be made to flow back to a state of health,

by the judicious and prompt administration of remedies, as typhoid pneumonia.

“Most of the cases were attended with a peculiar low remitting form of fever, that had usually an exacerbation at evening, which seemed to act as a stimulus to the patient and bolster him up for a time; but during the night and morning a corresponding remission would come on, that invariably reduced the patient's powers proportionately low. In the appearance of the tongue there was nothing constant. In some cases it was red and dry, while in others it was soft, moist, and white; occasionally it was livid. Diarrhœa was occasionally present. Symptoms of a nervous character were prominently developed in nearly all cases. Low muttering delirium and subsultus were very common. Stupor and somnolence were almost invariably present. In one singular case a paralysis confined to the muscles of deglutition, existed for several days before improvement commenced.

“Among the pectoral symptoms cough was usually not troublesome, neither was pain in the chest complained of any great deal. In many of our worst cases, both these symptoms were entirely absent, or were not complained of. Dyspnœa was very distressing in only a few cases. The presence of these indications in a well developed form was good evidence of a more sthenic type of pneumonia.

“The expectoration in the early stages was usually composed of thin bloody mucus, whilst in many others it was almost purely sanguineous, partaking of the hemorrhagic character. The appearance of muco-purulent expectoration always denoted improvement. Out of nearly fifty cases, I have witnessed but three with genuine rust-colored expectoration. The presence of this matter invariably indicated pneumonia of the sthenic form, and was a good criterion for depletive treatment.

“Of the physical signs, percussion elicited dulness over the whole extent of the pulmonic disease. The fine crepitant rale of active pneumonia I never was able to discover in the typhoid; as a substitute, a coarse sub-crepitant rale generally existed; sometimes in a few hours after the attack there was an absence of all sounds. When improvement commenced, in place of the redux crepitation, the ordinary submucous rales appeared.

“It was a little remarkable that, in all the female patients except one, there was a return of the menstrual period in a day or two

after the attack of pneumonia. The exception spoken of did not menstruate during the pneumonic attack, and died.

“During the course of the disease, emaciation progressed with great rapidity. In many, a few days sufficed to reduce the tissues like an attack of Asiatic cholera. Another peculiar symptom always present in the colored patients, was a dark jaundiced appearance of the sclerotic coat of the eye.

“The evidences are strong in favor of the conclusion that much of the fatality, in cases of typhoid pneumonia, is due to the poison of carbonaceous matter being retained in the circulation. It is perfectly obvious that when, as is often the case, one-half and even more than that extent, of the pulmonary circulation, is in a complete state of obstruction, at least half the entire amount of blood must be thrown out of the general circulation, and remain stagnant in the system.

“Another difficulty here presents itself, in the inability of the heart and arteries to push the column of blood through the obstructed lungs. It is also probable that the vitality of both the blood and capillaries, is so far annihilated in these cases, that the mutual affinities between the fluids and the solids are lost, affording another cause for the arrest of circulation.

“As some proof of this theory, while the nervous and vital energies were crushed with the rapidity and force of a narcotic poison, the complexion, in white patients, presented the lividity of a person breathing carbonic acid gas.

“*Treatment.*—The indications of treatment in these cases, were of a threefold character: first, to arouse the vital energies; secondly, to push the stagnant blood through the obstructed pulmonary capillaries and equalize the general circulation; and thirdly, by means having a more permanent influence, to subdue the latent inflammation peculiar to typhoid pneumonia. We discarded most of the standard rules for treating sthenic pneumonia, and marked out a course to suit the peculiar characteristics of the prevailing epidemic.

“To arrest the sudden, rapid, and dangerous prostration that was such an alarming feature of the disease, diffusible stimulants and nourishment in the form of brandy, milk punch and ammonia were administered freely and without reserve, from the beginning of the treatment. Without them, some cases would have died in six hours. The amount of stimulants given depended entirely on the exigencies of the case. Some patients consumed a quart of brandy

per day—not for one day only, but for many in succession, and recovered without injurious consequences.

“At a morning visit, on one occasion, to a patient, I found her cold, unconscious, and pulseless; brandy in ounce doses was forcibly poured down her throat every fifteen minutes, and under its influence I could perceive the slow and gradual development of the pulse, and a return of warmth to the surface. At first the pulsations numbered about twenty, and were scarcely perceptible to the touch; but increasing in a few hours while I remained, they recovered sufficient volume and strength to sustain the patient. At my next daily visit, the nurse informed me that she had given the patient more than a quart of brandy by measurement, during the twenty four hours, with decided benefit. This patient ultimately recovered.

“It was our usual custom to administer brandy in ounce doses, every hour or two according to the demands of the case. In combination with stimulants, diet of the most nourishing and digestible kind was as regularly enjoined as the remedies. I thought the rich milk punch combined these qualities to a greater degree, and suited the cases better than any other article.

“As an adjuvant to other remedies, I cannot speak too highly of the carbonate of ammonia, given in large and frequent doses. It appears to me to fulfil various indications, in these cases, while it is a valuable diffusible stimulant, and affords a concentrated material for assimilation and nutrition. I must place confidence in opinions lately published in regard to its influence as a solvent of the plastic materials of the blood. When the vitality of both the solids and fluids is reduced to as low a degree as they usually are in typhoid pneumonia, the blood, after remaining for days in an engorged lung, must tend to coagulation. The fact is, in many of these malignant cases there is scarcely sufficient vitality to prevent it. It is under these circumstances that the carb. ammonia is of incalculable value. I am fully satisfied that it aids the circulation through the congested pulmonic capillaries by its solvent powers.

“In most cases where the system possessed sufficient vital power to react after the first chill, a very low form of remittent fever was associated with the pneumonia. The pulse and animal heat declined very much during the morning, but towards evening a febrile exacerbation generally occurred. This indication led to a free use of quinine in combination with the other remedies, and I thought with much advantage.

"In none of our typhoid cases was depletion, either local or general, resorted to. Blisters were used in the latter stages of the disease, but with little perceptible effect. Mercury, generally in the form of blue pill, was administered from the first, in all cases without an exception, for the purpose of removing the latent pulmonic inflammation; but as its effects were slow, the system of the patient had to be sustained by the powerful stimulation above mentioned, until the recurrence of the specific effects of the mercury.

"Our usual formula was pil. hydrarg. gr. iij; sulph. quiniæ gr. iij; pulv. Doveri gr. ij, every three hours until the mercurial impression occurred, at the same time continuing the use of stimulants and nourishment. In many cases in which for days prostration was so excessive as to prevent febrile reaction, as soon as the specific impression of mercury was made, febrile reaction with a good full pulse came on. Purgation was restrained with opiates, generally in the form of Dover's powder, or tinct. opii.

"Dr. Norwood's tinct. of verat. virid. was resorted to in some of our cases of active acute pneumonia. In such cases it is quite equal to its reputation, and Dr. Norwood deserves, I think, great credit for bringing it before the profession.

"One case I will mention of double pneumonia in which the pulse was a hundred and fifty, but small; skin very hot, acute pain in the chest on both sides, and great difficulty of breathing. The tinct. of veratrum was given in four drop doses every three hours. In twenty-four hours the general symptoms had so far subsided that the patient considered herself well.

"On withdrawing the remedy, the same symptoms, but in a modified form, recurred again, and were a second and last time subdued by the remedy. For the pneumonia of very young infants, the veratrum in very minute doses was resorted to with the happiest effects. For such cases, I believe it one of the safest and best remedies in our possession.

"This constituted our entire treatment of nearly fifty cases of typhoid pneumonia, with the loss of only one, in which the treatment was too late. After apparent recovery in some cases, the lung remained indurated and impervious to air for several months. Iodide of potassium in large doses invariably removed the condition.

"A not inconsiderable observation of, and experience in, the management of typhoid pneumonia, induces me to believe that, when treated as energetically by stimulants as we ordinarily

treat the acute form by depletion, the mortality would be about equal in both forms of disease."

Malarial Pneumonia.—A report descriptive of a form of pneumonia thus designated, was presented to the North Carolina Medical Society in 1857, by Dr. Otis Frederick Manson, in which he claims to have been the first to have directed the attention of the profession to this particular type of the disease.

Dr. Manson remarks that "the existence of a form of pneumonia having some undefined connection with periodical fever, has long been known and noticed; but unfortunately for the student of the present day, the affection has not attracted the attention of recent investigators, and is only cursorily and imperfectly noticed by any of the modern standard authorities. The progress of pathology, the advance of therapeutics, and, still more, the change of that which Sydenham termed the Medical Constitution of the period, render it imperatively necessary, not only for the attainment of correct views of the nature of disease; but even for the recognition of its physiognomy, that its descriptions should be often revised if not altogether rewritten.

"This work, to a great extent, has been accomplished in reference to diseases generally; but as this affection is chiefly seen in regions, if not inimical, at least not fertile in authorship, the task remains (so far as we are aware) for it unperformed.

"To supply this deficiency is not the expectation of the writer; but he trusts that he is enabled to afford some materials from his observation which may be of some aid to those who have not possessed his clinical advantages, and to others more competent who may hereafter direct their special attention to the subject.

"In my opinion the phase of disease whose delineation is now attempted, is the form of pneumonia generally seen by southern observers; that its peculiarities are often unrecognized, being often confounded with simple typhoid and other varieties of pulmonic lesion. Not only this, but the assertion is here made, that, under proper management, this disease, although of decidedly fatal tendencies, is more under the control of remedial agents than any of the so called phlegmasiæ.

"If these declarations are true, how important is it that its features should be familiarly known, in order that it may not be confounded with diseases chiefly affecting the same organ, but so unlike in character and nature." It may not be out of place here to state, that the views and opinions of Dr. Manson have not been received

without opposition. They have been especially subjected to a minute analysis by Dr. W. T. Howard, of Warrenton, N. C., who contends that the disease described by Dr. Manson as malarial pneumonia, does not differ from the ordinary types of that disease with a malarial impression superadded, and that in this form it has been observed and described by numerous writers. Dr. Manson continues:—

“ *General course and progress.*—Malarial pneumonia attacks suddenly, being almost invariably ushered in by a chill, which is frequently of a severe intensity, and attended with rigors of variable duration. In very grave cases, however, the system is prostrated almost beyond the capability to react, and a prolonged cold stage is the result. Death, however, rarely is produced from this cause in the early stage, but fever more or less developed soon ensues. In most cases the patient seems to hover for hours, and even days, between the state of chill and febrile excitement. Pain in the side of a pleuritic character is generally next experienced, it being absent in very few instances. To the reactive fever dyspnoea and cough soon succeed. In some cases, however, the cough is tardy in its appearance, or is so slight at the commencement, as to elude the notice of the patient and physician. Headache, nausea, and vomiting, are very frequent and prominent symptoms, and frequently precede the cough and pain; the fluids ejected from the stomach being usually of a bilious character. The cough is commonly dry at the commencement, or attended with an excretion of glairy mucus; sooner or later, however, the sputa become more or less tinged with blood, forming the pathognomonic ferruginous expectoration, the hues of which are as numerous as the proportions in which blood and mucus may be mingled. Thus we shall see, in some cases, the latter merely tinged with blood; or, as more frequently happens, a uniform thin, bloody, frothy fluid is only seen, possessing but little viscosity or tenacity, whilst in some instances a pure and copious hæmoptysis is observed. Later, however, the expectoration is liable to great variations in color and hue; thus it may be of the various shades of brown, red, and yellow commingled, and in the advanced stages may become green, or almost black. The febrile action presents decided peculiarities, being usually distinctly paroxysmal and remittent. The remissions are, however, sometimes obscure, and an active fever exists during day and night. On watching the patient closely, however, a coolness of the extreme parts will be almost invariably observed, generally occurring daily,

and during the morning hours. This reduction of temperature may be confined to the ends of the nose, toes, and fingers, either separately or combined, and in grave and rare cases may extend over the entire extremities, or even the whole surface, amounting to a state of collapse. This coolness of the skin is not generally felt by the patient, but on the contrary, when it is present, he often complains most intensely of sensations of excessive internal heat, soliciting the introduction of cold air into his chamber; and as we have witnessed, wishing the doors and windows to be opened, and the fires extinguished when the thermometer stood below the freezing point near the bed of the sufferer. A marked increase of fever follows this insensible chill, which continues to increase in intensity, until an exacerbation more or less perfect is developed. The pulse, which had been very frequent and contracted in the chill, becomes expanded, acquires force, and sometimes, though rarely, becomes full or tense. The term *compressible* applies to the usual condition of the pulse, and the idea entertained on its careful examination is, that the heart is acting with only a seeming force, and not with real vigor. In some few cases, the pulse has been observed to be *nearly normal* or *morbidly slow*.

“The respiration in the chill is more frequent and the dyspnoea more urgent than in the exacerbation. The breathing is usually irregular on account of the pleuritic pain, but when this is absent, or has been relieved, the respiration is often but slightly embarrassed in severe cases in the early stage.

“The disease continuing unchecked, the paroxysms usually become less marked, the respiration becomes more continuously frequent and difficult, the acts often exceeding sixty per minute; yet, in some cases of a grave character, the breathing is scarcely accelerated during the whole course of the disease. A new symptom now sets in. The patient, who before may have been entirely rational, or slightly incoherent in sleep, or at the heights of the exacerbation, suddenly becomes wildly and persistently delirious.

“The cough now often ceases, the patient often breathing apparently better than when in a more hopeful condition. The tongue becomes brown or black and dry, sordes collect on the teeth, and the skin and sclerotica assume a jaundiced hue. The delirium increases in intensity, the patient growing almost uncontrollable, and requiring force to keep him in bed; and, when not watched, rushing out of the house when nearly pulseless and cold. Quiet

only succeeds to this raving to be quickly succeeded by the curtain falling on the last scene in the agonizing drama.

“Such are the usual phenomena presented by this affection, when left to the unassisted efforts of nature. Death, however, sometimes occurs evidently from the embarrassed functions of the lungs, as in cases of the idiopathic disease, produced by an impermeable condition of its parenchyma.

“The termination in health is marked by the gradual diminution of the symptoms, by the occurrence of diaphoresis, by a copious secretion of urine, and yet more often, by the discharge of greenish-black, viscid, inodorous stools, closely resembling tar in appearance. The passages by degrees become of a lighter color, passing through shades of green and yellow, until they assume the natural hue. The expectoration becomes less colored, the sputa becoming more homogeneous, and gradually assuming the smooth straw colored appearance characteristic of the resolution of pulmonic inflammations.

“The disease, however, sometimes becomes chronic, with copious purulent expectoration mingled with blood, the patient passing into hectic, with the rational symptoms of phthisis, terminating in death. In more fortunate cases, the disease, after many weeks, and even months' duration, may give place to entire restoration to health.

“*Physical signs and physical changes. First stage. Engorgement or active congestion.*—Advancing no claims to expertness in physical diagnosis, I feel a great hesitation in expressing my opinion in regard to the import and value of morbid sounds in this affection. I feel it my duty, however, to say that the crepitous rhonchus regarded by Laennec and his imitators, as the earliest pathognomonic sign of pneumonic inflammation in general, is not usually present at the commencement, nor, indeed, at any of the stages of this disease.

“That it is sometimes heard, we know, but that it is so commonly observed as to possess alone any very important signification in estimating the extent, precise seat, or gravity of the disease, I do not with my present experience believe.

“Its pathognomonic value, called into question, at the time of its promulgation, by Andral, Chomel, Cruveilhier, and others, has been more recently and strenuously contested by Stokes and the celebrated professor Skoda, of the school of Vienna. I therefore feel more confidence in candidly expressing my views.

"It is difficult, after perusing the works of Laennec, Williams, Walsh, Barth, and Roger, and others, and observing the positive declarations made by them, in regard to the existence and value of this sound, to withhold a belief in their statements. On the other hand, it is equally impossible to consult the distinguished authorities, above cited, without being convinced that they are penned by skilful and truthful observers. I do not know how these conflicting views can be reconciled, save by the supposition that their authors were observing different forms of pneumonic lesion.

"If the peculiar variety of pneumonia now under consideration, or, if this phrase is objectionable, if the condition of the organism with which inflammation of the substance of the lungs in the present disease is found associated, is widely different from that described by the majority of authors, then it is reasonable to suppose that some diversity in the physical signs should be observed.

"If in this disease, as we shall contend, the pathological condition of the lung usually partakes more of the character of congestion than open inflammatory action, then the absence of crepitation may be explained without impeaching the testimony of those who have sought to affix it to the first stage of pneumonia as the diagnostic sound. The presence of crepitating rale is justly and reasonably ascribed to the passage of air through the viscid pathognomonic secretion in the air cells and minute bronchi; that secretion being considered the result of inflammation.

"Now, although this fluid, as proven by its expectoration, is present in all varieties of pneumonia, yet it is usually more fluid and more sanguineous in this than in simple pneumonia, and we should, therefore, rationally conclude that the passage of air through fluids of varying tenacity, density, and composition, would produce sounds of varying character.¹ Again, it often occurs in the early stages of this affection, that the cough is unattended with expectoration for several days; indeed, we have seen cases of the most violent character terminating in death by apnoea, with expectoration scarcely sufficient in quantity to betray the character of the affection; the cough being dry throughout and the dyspnoea extreme.

"Now in these cases we should be prepared to learn that no crepitation would be heard, or if observed, not in proportion to the extent or gravity of the pulmonary lesion. Again, in describing

¹ Laennec himself only cites two cases of this form of pneumonia, in which the glutinous sputa and crepitous rhonchus were observed. [Forbes' Translation, 249.]

the anatomical characters of pneumonia, Laennec¹ admits, that inflammation of the bronchi is a frequent attendant on the simple form, its lining membrane being *commonly* very red, occasionally swollen, the redness sometimes extending over the whole bronchi.

“Now if this be true, and who will gainsay it, how is it possible that sonorous, sibilous and mucous rhonchi, should not be often heard, as maintained by Skoda,² and if present, drowning, according to Andral,³ the less audible sound of crepitation? But, as has been premised, as the anatomical character of this affection is doubtless an intense congestion of the parenchyma, associated, perhaps, in some degree with inflammation, it is probable that the absence of crepitation, in the large majority of cases, may be thus explained. In the first stage of this disease, we may have, therefore, the crepitating rale or mucous rales, in varying degrees, accordingly as the character of the case may partake of inflammation or active engorgement.

“In many cases, however, the practitioner will fail to observe any morbid sound, although the concurrent symptoms may render the diagnosis positive. In these instances the crepitating rale may sometimes be elicited by engaging the patient to cough forcibly, as advised by Barth and Roger. Although as I believe crepitation is neither pathognomonic, at least of this variety of pneumonia, or confined to inflammatory affections of the parenchyma, being simply the sound produced by the passage of air through a viscid fluid in minute tubes; yet, when present, its importance should not be undervalued, as when taken in connection with other signs and symptoms it affords a valuable aid to diagnosis.

“There are, however, as has been already indicated, other sounds observed in the first stage of this disease. Early in the invasion, in some cases on the first day of its existence, there is a copious sero-sanguineous secretion or exhalation present, obstructing the current of air in the bronchi, trachea, and larynx. In these instances, therefore, we have abundant bronchial, tracheal, and laryngeal rales, which may often be heard at some distance from the patient. On the other hand, as we have observed, all sounds indicative of disease are absent. Dyspnœa, pain, cough, peculiar sputa, and every other symptom may be present, yet no sound save the vesicular murmur, perhaps louder than in health, is heard, the chest being at the same time clearly resonant on percussion.

¹ Forbes' Translation, 220.

² Ibid., 306.

³ Note to Laennec, 246.

"In these cases the pneumonia is either central, or the secretion in the air-cells and finer branches of the bronchi may not be present in quantity sufficient to offer any obstacle to the passage of air. Whatever explanation, however, may be offered, I am fully persuaded, after careful exploration of the chests in many cases daily and hourly made, that at least in the early stage of this form of pneumonia no abnormal sounds can be observed.

"*Second stage. Solidification, Hepatization.*—These terms are synonymously used to denote that condition of the lung in pneumonia, in which it is no longer permeable to the air, but doubtless too often indiscriminately used. In this affection, as we have repeated and shall endeavor to maintain, the state of the lung parenchyma partakes more of the character of congestion than active inflammation. There can be but little doubt but that, in a great proportion of cases, *some degree* of inflammation exists, as proven by the presence of fixed pain, the peculiar sputa and other symptoms; but as we have premised, the expectoration is of a different character, partaking more of the appearance of diluted blood or of a sero-sanguineous nature.

"When therefore perfect dulness on percussion, and absence of the respiratory sounds, betoken condensation of the lung in this disease, it is not in my opinion due to an inflammatory process with lymph effusion, as in the frank form of pneumonia, and to which the term hepatization has been properly applied. We shall endeavor to substantiate these views, when the nature of this affection is considered.

"Lungs, says Walshe, which the naked eye would judge to be in the same condition, in regard to their shares of air, fluid, and semi-plastic substance, it is evident acoustically are in different physical states; specimens of parenchyma apparently identical are, in reality, widely different. In estimating the conducting power of lungs, there can be but little doubt that varying homogeneousness is a more important element than any so called 'solidification in pneumonia.'

"'Dulness,' says Blakiston,¹ 'will result from sanguineous congestion of the cellular portion of the lungs in contact with the walls of the thorax, whether of a passive character, being the result of obstruction to the circulation, or of an active character, as in the early stages of pneumonia.'² Andral considered hepatiza-

¹ Pract. Observat. Dis. Chest, 37.

² Pathol. Anat., vol. i. 511.

tion to arise from congestion of blood, and not from lymph effusion, and in this opinion Stokes also concurs.¹ Blakiston we think reasonably concludes, and cites experiments in proof, that in pneumonia there are two forms of solidification, one of which is produced by congestion, and the second by deposition of lymph.'

"*Percussion signs of solidification.*—'The thoracic walls,' says Skoda, 'beneath which the hepatized lung lies, yield a dull percussion sound, and their resistance is increased, provided the hepatized portion of the lung has the thickness of about an inch, and an extent greater than that of a pleximeter. The more extensive the hepatization, the duller is the sound, and the greater the resistance. If the sound is completely flat, as elicited in striking the thigh, then the lung is solidified throughout its whole thickness.'

"*Auscultatory signs.*—According to Laennec, in hepatization, the crepitous rhonchus and vesicular murmur are absent in the affected part, and this is frequently the only proof afforded of solidification having occurred, bronchophony existing in certain cases, if the inflammation is seated near the roots of the lungs, or in the superior lobes, where the bronchial tubes are largest. When the pneumonia is central, bronchophony is absent or obscure, becoming more manifest if the inflammation approaches the surface of the lungs; this being easily accounted for, he observes, as a hepatized lung is a better conductor of sound than a healthy one, bronchophony being nothing more than the resonance of the voice within the bronchi of the inflamed part.

"Bronchial respiration and bronchial cough, according to the same author, always accompany bronchophony, and when the hepatization is near the surface and involves within it bronchial tubes of considerable size, then it is frequently accompanied by a sensation of blowing into the ear (*souffle dans l'oreille*) and if a thin portion of pulmonary substance not yet hepatized intervenes between the ear and the affected bronchi, the sensation denominated the veiled puff (*souffle voilé*) is produced.

"The auscultatory sounds as described by Skoda more nearly accord with my limited experience. I however do not feel competent to pronounce on the correctness of his theory of consonance. He says, 'When the hepatized portion is extensive enough to contain within it at least one of the larger bronchial tubes, and if the tube contains air, is not obstructed and communicates with

¹ Dis. Chest, 286.

the trachea, then the voice of the patient will consonate in the bronchial tube and be heard either as loud or weak bronchophony over those parts nearest the tube.'

"The respiratory sounds vary according to the nature of the râles, in the larynx, trachea, or bronchi, through which the air must pass before it enters the bronchial tube surrounded by the hepatized tissue. The respiratory murmur may alone be heard, or, in addition to this, hissing, whistling, and sonorous sounds, either separately or combined. If the hepatized portion of the lung be not large enough to contain one of the larger bronchial tubes, or if it be large enough, but the tube be filled with fluid or solid matters, or if the communication between the tube and the trachea be obstructed by mucus, blood, &c., then neither bronchophony nor bronchial breathing, nor high, clear râles nor hissing, whistling, or sonorous sounds, will be heard over the hepatized lung; the patient's voice will be *inaudible*, or recognizable only as a dull muttering, and the respiratory murmur *indistinct* or *absent*.

"Whether the explanation of Skoda is correct or not, I cannot say, but certainly, in a large majority of my cases, neither bronchophony, bronchial breathing, or bronchial cough have been observed. I am inclined, however, to attribute their absence to the fact, that in this variety of pneumonia, the impermeability of the lung being due to excessive engorgement, and not to lymph exudation, it, therefore, does not possess the requisite density to make it a good conductor of sound.

"*Third stage. Purulent infiltration.*—This is a very rare termination in this form of pneumonia. When present, the physical signs do not differ from those of solidification. A well marked case of this condition came under my care, which was attended with copious purulent expectoration tinged with blood, being of a yellowish-pink hue, the quantity evacuated being at least two pounds per day for several consecutive days. Laryngeal, tracheal, and bronchial râles were distinctly heard at a distance of several feet from the patient. Percussion yielded a dull flat sound over the whole thorax, below the fourth rib, on each side beneath which no sound of the voice, cough, or respiration could be heard. Above this line percussion yielded a clear sound, and the ear discovered a coarse humid rhonchus with large bubbles, evidently due, like the sound in the windpipe above, to the passage of air through the abundant purulent secretion.

"*Signs of resolution.*—When this occurs, according to Laennec,

in the first stage, the crepitous rhonchus becomes daily less perceptible, and gradually yields to the normal respiratory murmur. When hepatization has taken place, its resolution is announced by the return of the crepitous rhonchus (*râle crepitant de retour rhonchus, rhonchus crepitans redux*). Skoda, on the other hand, maintains, and his views accord with my own observation, that the period of resolution is not invariably attended with the appearance of the crepitating rale, but in most cases is accompanied with a great variety of rales, or by whistling, hissing, and sonorous sounds.

“In some rare cases, he adds, no rales whatever appear during resolution, the bronchial breathing being at first indeterminate and at last vesicular. ‘The crepitating rale, or a rale resembling it,’ he adds, is heard during the resolution of moderately severe cases of pneumonia; it is also occasionally observed in severe cases at a more advanced period of the resolution, when the secretion has become scanty.

“In the greater number of cases, the vesicular breathing does not return immediately upon the resolution of the disease; but we generally find, after all the functions are restored to their healthy condition, and percussion no longer yields any abnormal sound, that the respiration still remains indeterminate, or that the rales, or hissing, whistling, and sonorous sounds continue.

“Auscultation yields the same sound when the resolution is incomplete.” In conclusion, the distinguished author sums up: “It follows, from the above, that the presence of pneumonia cannot be determined by the auscultatory signs alone; that these are often very indefinite, and that bronchophony, bronchial breathing, and other sounds, as well as vesicular breathing, and fine equal bubbling rales, are signs which of themselves do not enable us to draw accurate conclusions as to the condition of the lung parenchyma. In forming our diagnosis, we must also take into consideration every other symptom attainable by percussion, and by other means at our command.

“*Diagnosis between Malarial and other Forms of Pneumonia.*—The varieties of pneumonia with which this affection is most liable to be confounded, are simple or idiopathic pneumonia and typhoid pneumonia. I shall, therefore, be necessarily compelled, in order to institute a comparison between these disorders, to glance at their predominant characteristics. I shall do this with all the brevity which the importance of the subject and my faculty of condensation will allow me to use.

“*Simple Pneumonia*.—The celebrated Cullen, whose descriptions of the rational symptoms of diseases were masterpieces of faithful delineation, and who doubtless drew his pictures from this form of pneumonia, says: ‘Pneumonic inflammation, however various in its seat, seems to me to be always known, and distinguished by the following symptoms: pyrexia, difficult breathing, cough and pain in some part of the thorax; and that, for the most part, the pulse is frequent, full, strong, hard, and quick.’

“This portrait of the affection continued to be the principal guide, from the time in which he wrote until the occurrence of the modern discoveries in pathological anatomy and physical diagnosis. To the symptoms laid down by Cullen, we have, therefore, the important aids furnished by those valuable additions to our science. In drawing a comparison thus far between the general symptoms of these affections, we perceive at once a close resemblance, which would amount to identity, were it not for the dissimilarity in the character and variations of the pulse, that in malarial pneumonia being frequent, soft, of moderate fulness, compressible, and never or rarely very full, tense, or hard. Nor is the circulation in simple pneumonia subject to the same diurnal variations. It is true, that writers aver that in some cases of the latter form, the fever is sometimes evidently remittent; but granting that those cases did not belong to the malarial disease (though we strongly suspect the contrary), still I think that a marked paroxysmal character is seldom or never observed in the simple form.

“The regularly recurring cold stage is another guide to discrimination, seldom absent in the malarial affection, whilst in the frank form, the skin is uniformly of an elevated temperature in the great proportion of cases, generally being hot and dry, at all periods of the day and night, whilst in the exacerbation of the former disease, the heat is more moderate, and is subject to a daily decline in the remission, which occurs immediately before the reappearance of the chill. The evidence of hepatic and gastric disorders has gained for the malarial form the epithet of ‘bilious,’ and although we utterly reject that view of its pathology, which associates either this disease or any form of malarial disease necessarily with hepatic lesion, save as regards the occurrence of the latter, as a secondary affection of minor importance, yet the frequent presence of nausea and bilious vomiting, in several cases, will doubtless afford some aid to diagnosis; those hepatic symptoms dependent on sympathy

of contiguity, when the inferior lobe of the right lung is implicated, in pure pneumonia, being of exceptional occurrence.

"The condition of the bowels in this disease and the latter is also different. In the malarial form the intestinal canal seems generally to be in a state of phlogosis or exalted sensibility. This is manifested by the frequent presence of diarrhoea; and when this is not evident, by the hypercatharsis often induced by the mildest aperients. Later, when the disease succumbs, convalescence is usually announced, by those characteristic, and we may say critical, alvine evacuations before described.

"The expectoration is often very different in the two diseases. In this it is usually less viscid, less copious, and more fluid, partaking more of the character of blood mingled with serum; in fine, presenting more of the character of a defibrinized blood than the usual product of inflammatory action.

"The presence of delirium is more common in the malarial than in the simple form. In the former it is usually distinctly intermittent or remittent in the early stages. At that period it also is usually mild in its character, the patient seeming to be in a state between sleep and awake, muttering incoherent and rapidly changing fancies, but when fully aroused and his attention directed, replying in a rational manner.

"The delirium is evidently of a neuralgic character, being often attended with a cool skin and feeble pulse, with no other symptom belonging to organic cerebral lesion, and like the hallucinations of delirium tremens, to which it bears many and striking resemblances, is relieved by sleep to recur again, however, in the febrile paroxysm. Delirium, however, supervenes under other circumstances, which although we have already noticed, constitute such an important feature as will excuse a repetition.

"Often, without any previous cerebral symptom whatsoever, after the pneumonic symptoms have been mitigated, or have entirely disappeared, and confident hopes are entertained of the patient's recovery, a furious delirium suddenly occurs. I cannot refrain from adding this striking characteristic, as drawn by Cleg-horn: 'Besides some abatement of the fever, which happened every morning, it was remarked that upon the third day or beginning of the fourth, there was frequently a great remission, sometimes a total cessation of every violent symptom, so that the sick were thought to be out of danger, but on the fourth or fifth, a delirium suddenly came on, or the breathing became more difficult than

ever, and one or both of these symptoms increasing hourly, the patient expired either suffocated or raving mad, unless nature or art assisting, he had the good fortune to escape by some critical evacuation.'"¹

It has happened to the writer to have seen cases, in which every rational and physical sign of convalescence had made its appearance, but which on the next visit were found to be in the same condition as when first attacked, without any known cause which could probably be assigned for the change. In these cases it will be perceived that the malady was strictly intermittent, and the recurrence of the symptoms was evidently connected with the periodical character of the affection and the liability of that class of diseases to relapse.

"We have thus briefly pointed out the variations presented by the several organs, functions, and secretions, to aid the beginner in discriminating between this and the simple form; but there is another phase of pneumonia, with which it is also too often confounded, and which of late years is seen frequently in malarial regions, and from which it is equally important that it should be distinguished, viz., typhoid pneumonia.

"By the term typhoid pneumonia, I designate that species of pulmonic lesion which presents itself as a complication of the form of continued fever, for many years widely prevalent in the old and new world, and by general acceptation known as typhoid fever. It is true that this term and its synonymes have often been applied to simple and malarial pneumonia, but I believe on erroneous grounds. The designation typhoid, asthenic or sthenic, cannot be applied to the latter disease, as the exhibitions of vital force or reaction are too variable in their nature, intensity, and duration, to render them appropriate.

"Thus we have seen, in some cases of the malarial disease, the vital powers were almost overwhelmed at its onset, continuing thus for days together, and at last perhaps followed by violent reaction; whilst in the cases generally, there were such diurnal changes that the same patient might have been regarded in an asthenic or sthenic state on the same day, accordingly as he may have been seen in the remission, chill, or exacerbation. It is true that the malarial affection, when continuing, finally places the patient in an adynamic state, but this is true of acute diseases

¹ Diseases of Minorca.

generally, and must be regarded as a sequent and not as an original condition.

"The term typhoid cannot be properly applied to any form of simple inflammation. In my opinion pure inflammation of the lungs, occurring in a previously healthy subject, cannot present typhoid symptoms, unless it is associated with some morbid element, which impairs the resistant powers of the organism. When, therefore, such a patient prominently presents the symptoms of pneumonia, attended with deficient vital reaction, the inflammation of the lungs is a secondary or collateral affection, and not the primary or essential malady under which he is laboring.

"Typhoid pneumonia may be presented as an intercurrent affection, but often the inflammation of the lungs is the first and most conspicuous symptom. To such an extent and so marked is the expression of this lesion, that the practitioner is liable to regard the pulmonary affection as the sole cause of the illness of the patient, and not perceiving the system condition with which it is connected, may be led into the error of treating it as such. On minutely inspecting the case, however, he will be enabled generally to discern its true character, and recognize, under the veil of pneumonia, the peculiar form of fever on which it is engrafted.

"To the novice we offer a few observations as guides to a correct diagnosis. Typhoid pneumonia usually differs from the forms before mentioned: 1st. In its mode of access. It is usually more gradual in its approach; and in cases in which the pneumonic symptoms announce themselves suddenly, it will commonly be found, on inquiry, that the patient has been indisposed for some time before their appearance.

"2dly. In the character of the attendant fever. The regularly recurring paroxysms of malarial pneumonia are absent, the firm full pulse of the simple form is never observed, but, on the other hand, symptoms of great depression of the vital powers are generally present.

"In short, we are usually enabled to discover the peculiarity of the case, by bearing in mind that the patient before him is the subject of typhoid fever with pneumonia superadded.

"Lastly. In diagnosing the various forms of pneumonia, we should look around our patient and endeavor to ascertain the sources of disease to which he has been exposed, whether of transitions of temperature, moisture, contagion, endemic, or epidemic influence.

"Although the rules laid down are generally applicable, we

should ever be on the alert for fear of a mistake. It is desirable that it should be impressed on the mind of the beginner, that he will often be compelled to diagnose and treat many cases of which his knowledge must be chiefly drawn from the character of the epidemic present.

“Physical signs often interpret disease imperfectly; symptoms are merely outward expressions of an internal departure from normal vital action; they often vary, they are frequently obscure, and the same morbid agent has so many different modes of displaying its effects on the organism, that many instances must present themselves to the observer in which no pathognomonic guides will be perceived, or if present, undecidedly and imperfectly pronounced.

“*Cause and Nature of Malarial Pneumonia.*—The efficient cause of this disease, as its name implies, I believe to be malaria. By this term I desire to imply the identical cause of that class of pyrexia now generally known as periodical fever.

“In employing this description, I do not commit myself to, or demand a belief in any of the theories concerning its origin, but as naught, save the Great First Cause, can exist without a creator, so periodical fever cannot, without being called into existence by some morbid agency. * * * *

“Nevertheless there are some axioms which may be regarded as established in reference to this source of disease, which, for the elucidation of my views, it is necessary to bear in mind.

“First. The primary impression of malaria is depressing in its character.

“Secondly. Periodical fever may owe its existence to an exposure to its cause at a period considerably antecedent to its development.

“Thirdly. This class of fevers, though chiefly rife in the warmer, may occur primarily at any season of the year.

“Fourthly. A person exposed to malaria may present indubitable evidences of its pernicious influence, without any regular attack of fever having occurred, such as anorexia, nausea, malaise, diarrhoea, neuralgia, debility, palpitation, emaciation, and anæmia.

“Fifthly. Persons constantly exposed to malarial influence may retain perfect health.

“Sixthly. In persons of this latter class, periodical fever is often suddenly developed by any depressing cause, such as a blow, a fall, a shock, and by the incidental occurrence of other diseases.

“The doctrine that this form of pneumonia owes its existence to malarial influence has long been entertained and acted upon, but, on the other hand, has been as strenuously contested, both in regard to its correctness and legitimate consequences. The subject is one of great interest and of the highest importance, involving unquestionably the lives of the inhabitants of many sections of our own and other countries.

“The reader who has had frequent opportunities of observing remittent fever at the bedside, or those who have not, who have known the writer, by their perusal of his imperfect descriptions of that disease, cannot fail to perceive the close resemblance between the phenomena presented by that affection and the disease under consideration. Indeed, the similitude is almost perfect, with the addition of the signs and symptoms of the thoracic lesion.

“It will be observed, therefore, that the evidences of organic implication are by no means confined to the organs of respiration; and symptoms of gastro-intestinal disorder very frequently preceded the lung symptoms, and that both were very often preceded by febrile excitement for hours and even days. We have seen that the patient evidently does not always perish from the pathological changes wrought in the lungs, death more often occurring from the supervention of fierce delirium, not only independent of the lung affection, but subsequent to its abatement or total disappearance. These facts then clearly denote the connection between this disease and periodical fever, as they sufficiently prove that its phenomena are not merely symptomatic of lesion of the lungs.

“By some, an explanation of the existence of this disease has been given by attributing it to the combined influence of malaria and atmospheric vicissitudes. This is doubtless often true, but it does not offer a satisfactory solution of the fact, that many are often attacked with it, who have not been exposed in any appreciable degree to those changes. Indeed, this affection often attacks a number of persons consecutively in the same household, with sufficient intervals of time elapsing between the occurrence of the cases to permit all conditions of temperature and humidity to appear, properly belonging to the season.

“‘It is probable,’ says Laennec, ‘that the epidemic peripneumony is often owing to deleterious miasms, which have entered the system by means of the cutaneous or pulmonary absorbents, since nothing is more common than to meet with cases of this disease, to which we can assign no occasional cause. How many persons

are seized with it in their very chambers and in spite of the utmost care taken of their health. It is impossible that any observer of ordinary perception, can have failed to have been often impressed with this affection. Exposure to atmospheric alternations does not, therefore, offer a complete and satisfactory explanation of the general occurrence of this affection.'

"I propose with some diffidence to offer a few thoughts on the subject. It is a fact which will scarcely be questioned, that during the prevalence of any fever in seasons of low temperature, pulmonary inflammation is prone to occur as a complication. In scarlatina, rubeola, typhoid fever and other febrile affections, it is very common. There are some causes, therefore, existing and belonging to the season, which either excite or predispose to lesion of the lung parenchyma.

"In instituting an inquiry into the operation of those causes, it will be necessary to bear in mind, that the system has passed through the fervid heat of summer, the balmy temperature of autumn, by transitions more or less variable to the colder season of the year. Usually the outward man has been prepared for this change, the whole surface of the skin having been protected from the effects of reduced temperature by clothing of proper quantity and quality. But how is it with the lungs, the only remaining surface besides its outlet, which is exposed to the direct contact of air? What has been done to protect that extensive, delicate lining of the air tubes and air cells; that admirably contrived membrane, abundantly supplied with bloodvessels of such remarkable construction and tenuity, as to allow the permeation of air through their delicate parietes, and yet allow, under ordinary circumstances, no escape of their contents?

"It is evident that this great annual change of temperature cannot take place without some important physiological revolution in the pulmonary circulation; to understand the nature of which, it is only necessary to remember the usual effects of reduced temperature upon vascular tissues in general. The first impression of cold upon the lungs must necessarily be succeeded by contraction of their capillary vessels. Happily, however, our organs are endowed with a certain degree of resistance to depressing causes, under the operation of which the vessels again expand and allow the free transmission of their contents. In short, the equilibrium of health is established. The resisting force which thus averts disease, or, in other words, the nervous force, the only power existing

in the system of which we are cognizant, must, however, be continued and maintained in order that no embarrassment to the circulation may ensue; consequently throughout the colder seasons, a greater amount of nerve power must be expended in the lungs to preserve their physiological condition.

“Again, the effects of reduced temperature will be in proportion, first, to its intensity and duration, and secondly, to the capability of resistance residing in the system.

“If we suppose that the system is contaminated by the depressing influence of malaria, whether enervated by open attacks of malarial fever, or debilitated by its latent influence, it necessarily follows that such a person must be in a favorable condition for the development of pulmonary engorgement, from the fact that he is subjected to a temperature requiring a healthy nervous force to resist, which he does not possess.

“There is plainly, then, a degree on the thermometric scale, equivalent to disease with him, yet compatible with health in others.

“Let us advance one step further. The degree of cold being present, beyond the nervous power to resist, or having endured so long as to have for a time exhausted its resources, let us look again to the capillaries of the lung. If the vessels contracted by the application of cold do not possess the normal resistant vigor, as we have assumed as an axiom in the malarial diathesis, the same or greater effect is produced than by a more intense degree of cold acting on a healthy subject.

“Under ordinary circumstances, however, the nervous centres will be stimulated to react (those cases attended with collapse in the commencement being the exceptions), the reaction, according to a law of the organism, being in proportion to the previous depression. ‘An increased afflux of blood to the part consequently ensues, and as the action of cold has indirectly produced the same effect as that produced by a direct irritating cause, it will only be necessary to follow the subsequent steps in the process to the state of active congestion, as detailed in Kaltenbrunner’s experiments.’¹

“But there is yet another function, which has also to undergo an important modification. The skin, which had been exalted in the warm season to excessive activity, gradually falls into a state of comparative repose as the bleaker season arrives. This evidently

¹ Watson’s Practice, art. Active Congestion, p. 46.

occurs, however perfectly it may have been protected. This subsidence of function must necessarily be followed by a determination of blood to the internal organs, the retrocession being greater and more easily induced in malarial subjects for reasons before adduced.

“We have now an explanation of the modes by which cold and malarial influence may act as exciting and predisposing causes of this affection; but this solution does not wholly apply to those cases occurring in previously healthy subjects, while sedulously guarded from atmospheric vicissitudes. These cases are evidently due to the evolution of malaria, the affection of the lungs being produced by the predisposing tendencies of the season.

“Objection has been urged on many grounds to this view of its causation; the principal one of which is, that pneumonia prevails in seasons inimical to the existence of this mysterious agent. This is plainly an error. Primary attacks of periodical fever not unfrequently occur during the winter and spring months, especially in the latter, which is also the season in which this form of pneumonia is usually prevalent. The opponents of the views I have embraced seem to ignore this established fact, as old as the ancient couplet:—

‘An ague in spring
Is fit for a king.’

“They have, however, been compelled to yield the admission that a form of disease similar to that we have described often prevails as an epidemic. Now, whether it be regarded merely as a complication, a compound, or as a hybrid affection, it cannot be disputed, that it rages in these seasons of the year; the temperature of which they assume to be distinctive of malarial influence. The inconsistency is obvious.

“The occurrence of periodical fever not only in the spring, but occasionally in the winter months, being easily established,² there are conditions necessary to notice, closely associated with its nature and phenomena, which, besides the tendencies of the season, assist in producing a sanguineous determination to the lungs.

“When discussing the subject of remittent fever, I briefly endeavored to prove its nature, from the character of the symptoms

¹ Elliotson's Practice, 242.

² Under the name of adynamic remittent, I have described a form of remittent fever often seen in the winter season in my region. See article before referred to.

existing during life, and to show that there was constant tendency in the vital current to retrocede from the extremities to the trunk, and in grave cases from the whole surface to the internal organs. Of the cause of that morbid afflux, I then avoided discussion. I do so now; but in my opinion it is produced by an irritation of the nervous centres of a peculiar character. As a consequence of this irritation and congestion, delirium, difficult locomotion, dyspnoea independent of pulmonary engorgement, with varying conditions of pulse, and abdominal symptoms were observed accordingly as different portions of the cerebro-spinal axis may have been involved.

“To sum up our reflections on the pathology and etiology of this form of pneumonia, we have therefore to explain its production and phenomena.

“First. The predisposing tendencies of low temperatures to produce an afflux to the lungs, by direct contact with their interior surface.

“Secondly. The same cause by repression of the cutaneous evacuation, determining to the whole internal organs.

“Thirdly. The operation of malarial influence, which not only diminishes the vital resistance to cold, but possesses an evident inherent tendency to produce internal engorgement.¹

“A glance at the pathological condition of the lung will close our observations on this division of the subject.

“I have repeatedly stated in the foregoing pages, my impressions in regard to the condition of the lung parenchyma in this affection, as partaking rather of the nature of active congestion than of well developed inflammation. This is proven in my opinion by the following circumstances. First. The sudden occurrence of solidification, as evinced by perfect flatness on percussion and absence of the respiratory murmur. This sometimes takes place in grave cases in a few hours after its onset, involving more than half of

¹ Broussais, who doubtless saw a vast number of cases of this disease whilst serving in the French armies, and who has noticed at great length the connection between malarial fever and pneumonia, was fully impressed with similar views. *Cette concentration des forces à l'intérieur ou si l'on condamne ces expressions, cette accumulation violente du sang, dans les capillaires des viscères, qui existe durant la période de froid, des intermittentes, devient surtout funeste au poulmon pendant la saison froide.* Histoire des Phlegmasies ou Inflam. Chroniques, tome ii. 588. See also works of Laennec (op. cit.), M. Bailly, *Traité des Fièvres Int.* Paris, 1825. Cleghorn (op. cit.).

the entire lungs, accompanied by a cold skin, flagging pulse, colliquative diarrhœa; a condition of system totally incompatible with the existence of the inflammatory process. Secondly. The disappearance of the physical signs is too rapid, in many cases, to suppose that inflammation terminating in plastic exudation had produced this impermeable condition of the lungs.

“It is true, as we have stated, that there are some evidences of inflammation¹ mingled with the symptoms, and, as active congestion is a state closely allied to inflammation, the latter may, and doubtless does occur, but it is evident that inflammation cannot be the general condition, as it is too expeditiously removed, in many cases of several days’ duration, and by inadequate means, to render that view admissible.

“*Treatment. In the chill.*—In this stage, it is evident that the state of internal congestion is most intense; the indications are therefore to remove or lessen this condition. As in ordinary cases the vital powers are competent to produce reaction, the employment of active measures will be unnecessary; but when the cold stage is serious and protracted, the usual means adopted in remittent fever should be called into requisition. Warm applications are to be assiduously made over the whole length of the spinal column, and to the extremities, together with stimulating frictions, and to these may be added warm cataplasms of mustard, or of capsicum to the anterior and lateral surfaces of the thorax. If these means should be unsuccessful in restoring the circulation to the surface, enemata of the sulphate of quinine may be used. Eight or ten grains of the salt dissolved in two ounces of mucilaginous fluid may be thrown into the rectum every half hour or more often, until symptoms of reaction ensue. If diarrhœa has been or is present, the following enema will be more efficacious:—

Quiniæ sulph. gr. x;
Morphia sulph. gr. $\frac{1}{8}$;
Acid. sulph. dilut. gtt. x;
Aquæ $\mathfrak{z}$ ij.—Misce.

“To be used as the former, but at longer intervals.

“The action of the enemata may be assisted by the administration of the carbonate of ammonia by the mouth, or infusions of ginger or capsicum whilst warm may be given. In extreme cases

¹ In Laennec’s cases, he only mentions that “traces of inflammation were found after death” (op. cit., 249).

it will be necessary to resort to alcoholic stimuli. These, however, should be used with caution, and their effects closely observed.

“Fortunately, however, it is rarely that much difficulty is encountered, in conducting the patient through the cold stage, and medication may generally be postponed, until the febrile reaction is developed.

“*The exacerbation.*—The indications in this stage are to calm the action of the heart, to remove congestion and to prevent the occurrence of the next paroxysm. If the pulse is hard, full, or tense, as it is in rare and exceptional cases, or if the patient is robust, or previously healthy and possessing ordinary vigor, and the pain or dyspnoea is very intense, and the character of the pulse or other symptoms does not decidedly contraindicate its employment, then a moderate quantity of blood may be taken from the arm.

“In this disease, general bloodletting should be employed with a view *only to moderate* and not with an expectation to cut short the disease; nor should it be employed except in the instances referred to. In cases where this is not followed by marked relief and in those in which venesection is inadmissible, the local abstraction of blood by cups or leeches should be resorted to, and may be used as freely as considerations of safety will permit. The time at which bleeding¹ by any mode should be practised is that period when the exacerbation has reached its acme, which is almost invariably in the afternoon or evening.

“The administration of medicine is generally postponed until nine or ten o’clock P. M., at which time a full dose of calomel (fifteen or twenty grains) is administered. If diarrhoea or a tendency thereto is present, eight or ten grains of Dover’s powder are generally combined with the mercurial. Two or three hours thereafter, this is followed by a full dose of quinine (fifteen or twenty grains), in pills or diffused in a wineglassful of cold water. Three or four hours are now allowed to elapse; we now usually repeat the quinine in doses of five to ten grains, in proportion as the pulse

¹ In the remittent fevers denominated pernicious peripneumonic, says Laennec, it may no doubt sometimes be necessary to bleed during a paroxysm, in order to prevent suffocation, but the utmost caution is necessary not to destroy unnecessarily the strength of the patient. We must ever keep in mind that bloodletting cannot cure a disease which will certainly return after a few hours with fresh violence, and of which experience has long since demonstrated bark to be the only remedy. *Op. cit.*, 293.

may have been reduced, until thirty-five to forty grains have been administered and the patient is then left at rest.

“According to my experience, the chill cannot recur whilst the patient is under the influence of the above quantity of the alkaloid; the fever may however continue, but usually in a very moderate degree. Should this be the case, the local bleeding is repeated in the evening exacerbation, and calomel in small doses of one or two grains, with a half to one grain of ipecac, or two grains of Dover’s powder, is given every one or two hours.

“After midnight, the quinine is repeated in the same manner, or in lesser quantity (in direct proportion to the degree of fever present), until the period of chill has passed, when all medicine is again suspended. It is rare, indeed, that cases thus treated in the early stages do not exhibit the most flattering amendments, on the day succeeding the first night on which the plan is adopted; and still more rare that every dangerous symptom has not disappeared on the succeeding day.

“Should the pneumonic symptoms, however, persist, the mercurial should be continued until its constitutional effects are produced. In some cases in which the arterial action is not disposed to yield, and the dyspnoea continues, I have ventured on the use of tartar emetic in small doses, in union with quinine. I am indebted to Dr. Blakiston for a knowledge of the value of this combination. The antimonial should however be carefully used; and it is better to commence with a minimum dose of one-tenth or one-twelfth of a grain, to be gradually increased as it may be borne. I think it proper to say too that the gastric irritation and tendency to diarrhoea, so often present in this disease, contraindicate the employment of tartar emetic generally.

“Whether alone or in combination the quinine should, however, be continued for several days after the active symptoms have disappeared. Blisters may be employed at almost any stage of the affection, but under this mode of treatment, may often be altogether dispensed with. Of course their use is preferable after the arterial action is moderated.”

I have thus endeavored to present a sketch of the principal epidemic diseases which have recently prevailed in the State of North Carolina. I am profoundly sensible of its incompleteness and its imperfections; for notwithstanding every effort on my part, I have

been unable to secure that extent of co-operation among the physicians of the State, without which anything approaching a complete picture of its prevalent diseases, is altogether impracticable; and it is now submitted only in obedience to the sense of obligation imposed upon me by the appointment of the Association, requiring me at least to make an effort to respond to their wishes.

